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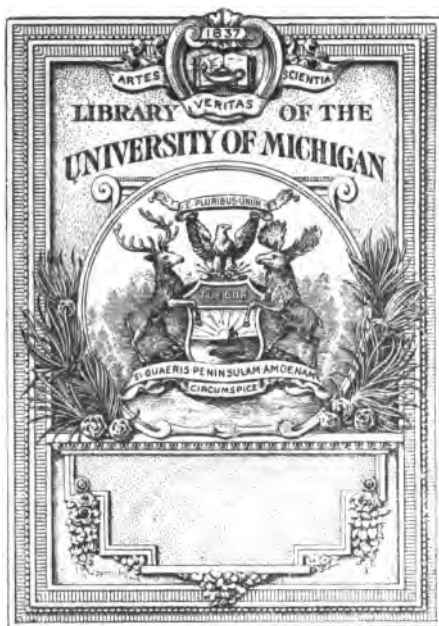
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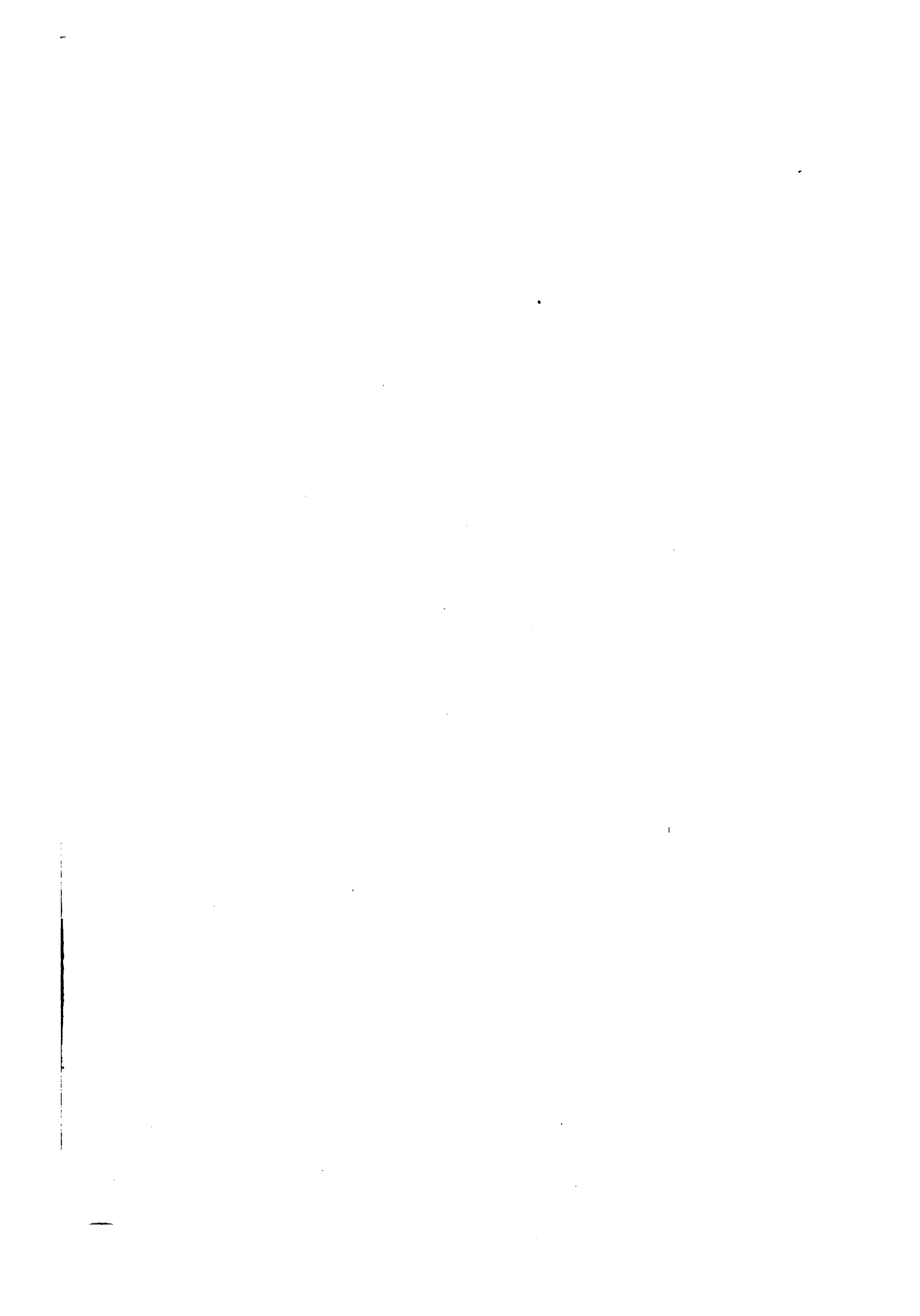
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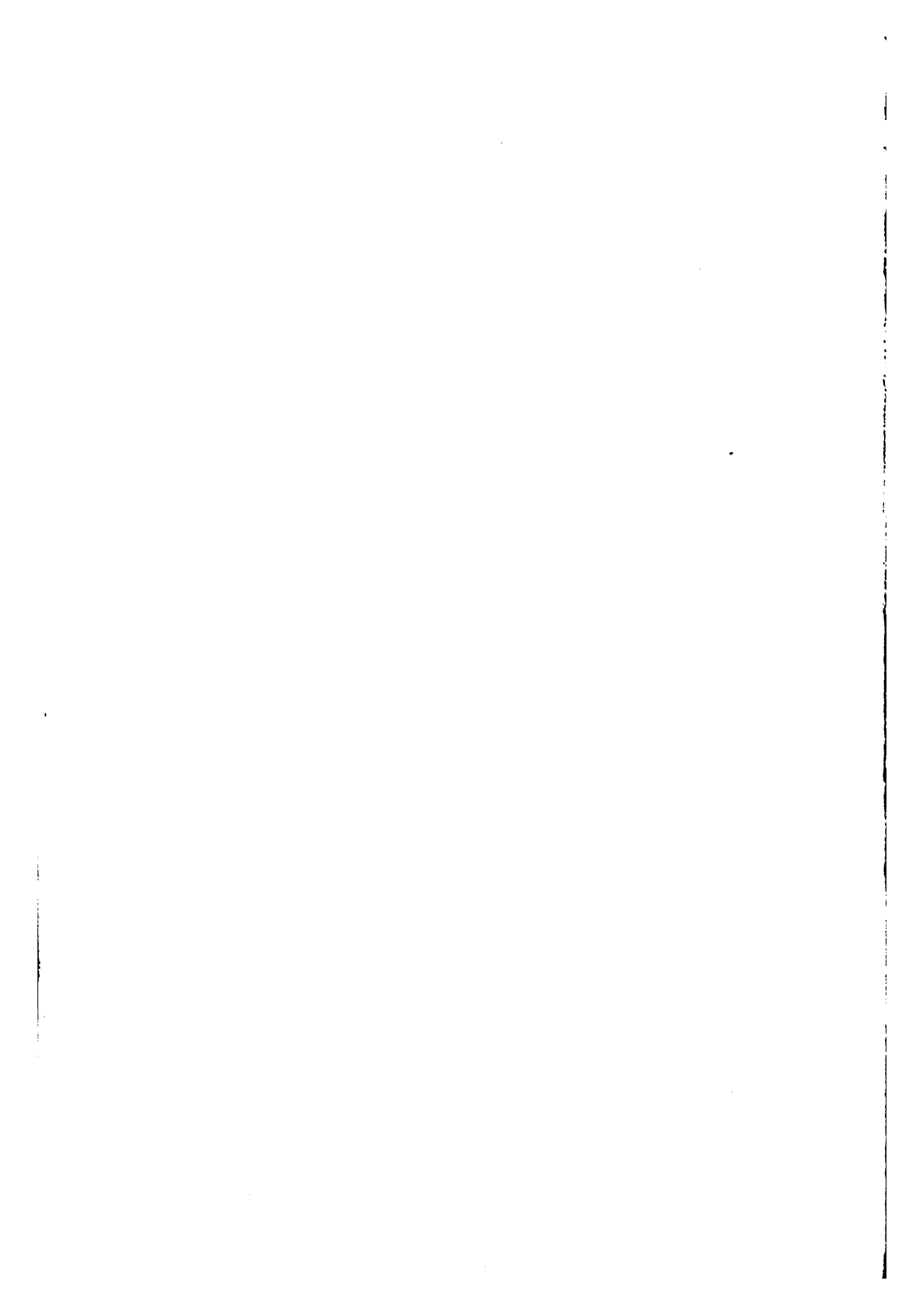
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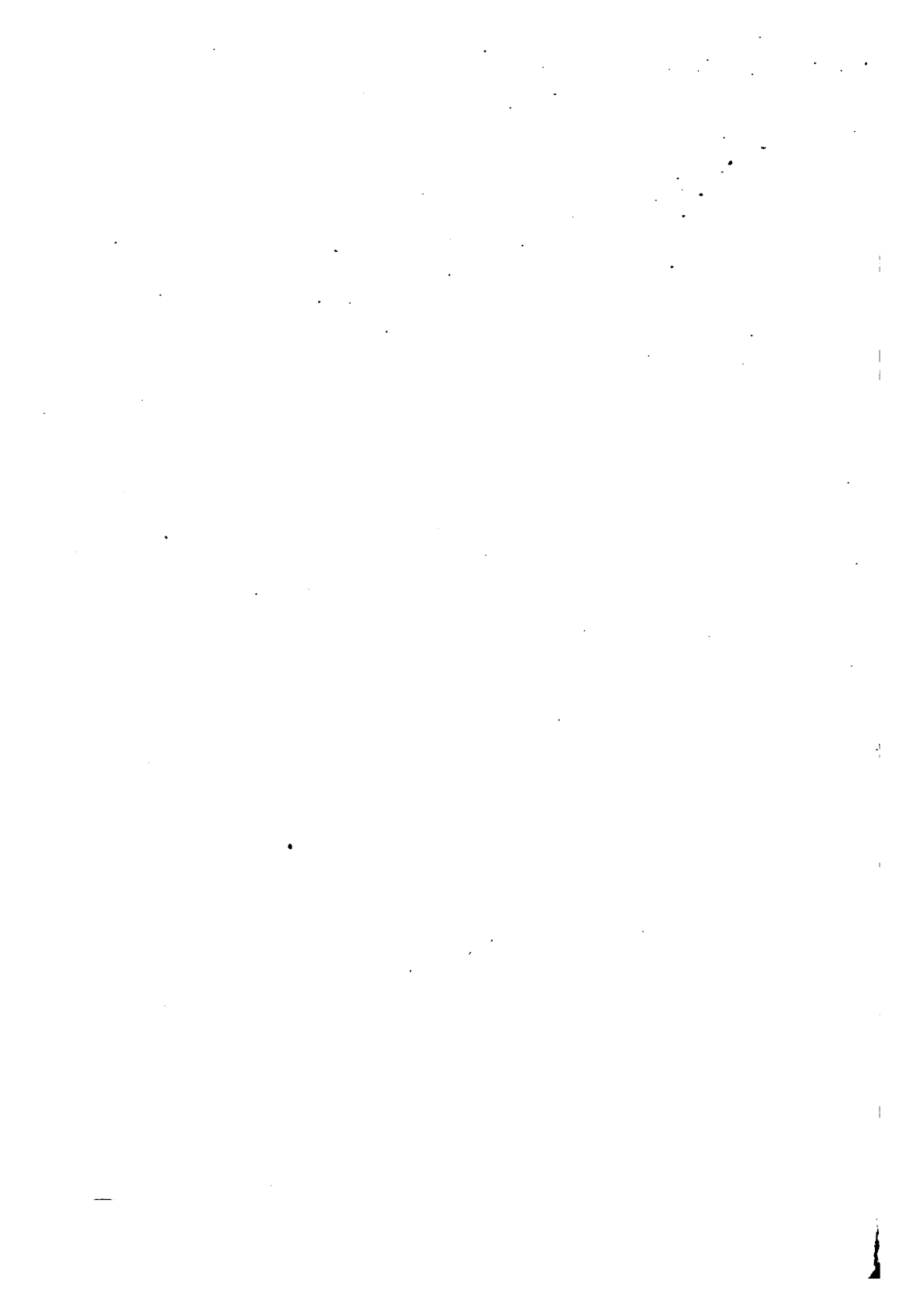


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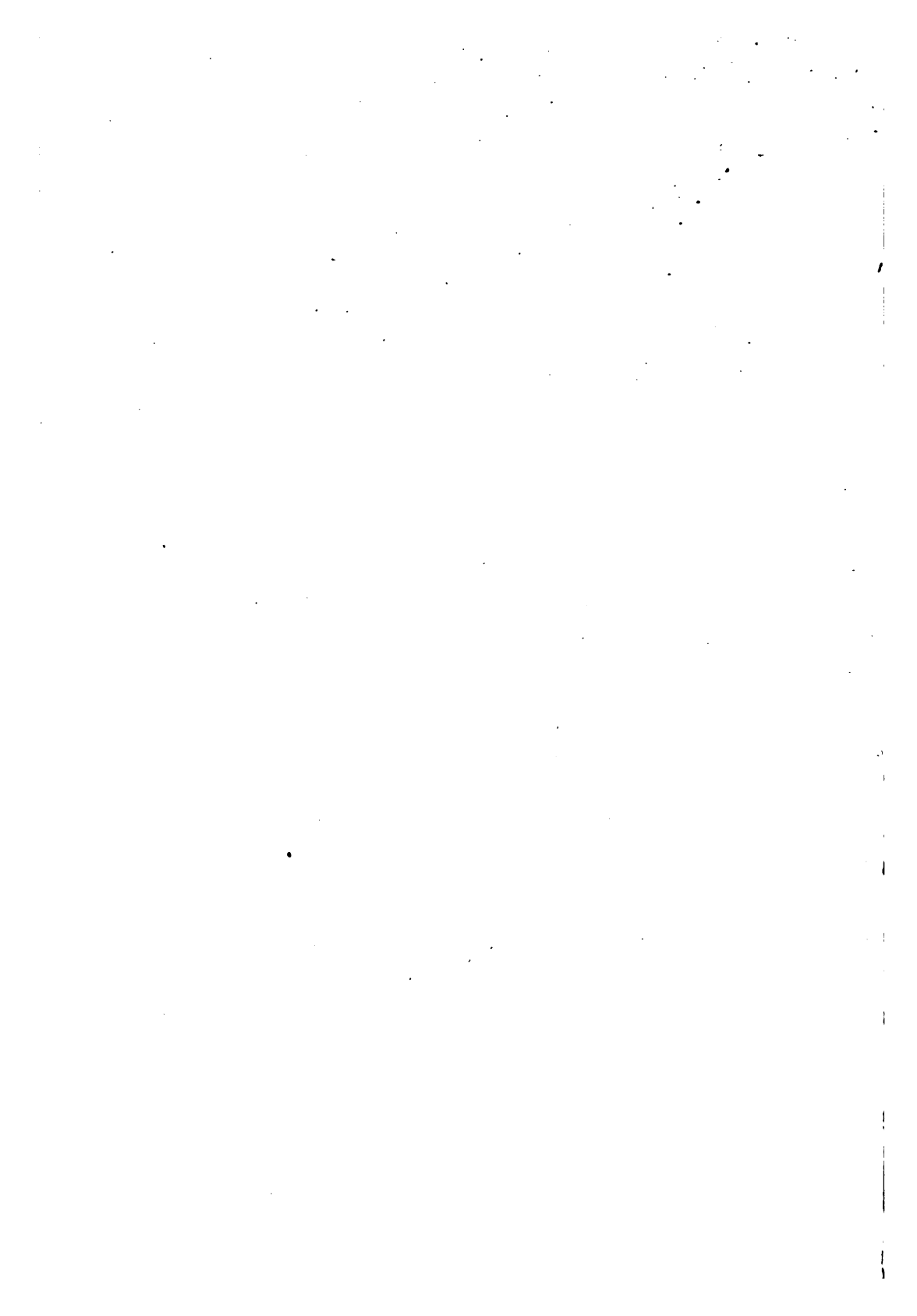




**DESIGN IN
LANDSCAPE GARDENING**



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Painted by Hobart Nichols

THE RHODODENDRONS

Country Place of Professor Charles S. Sargent, Brookline, Mass.

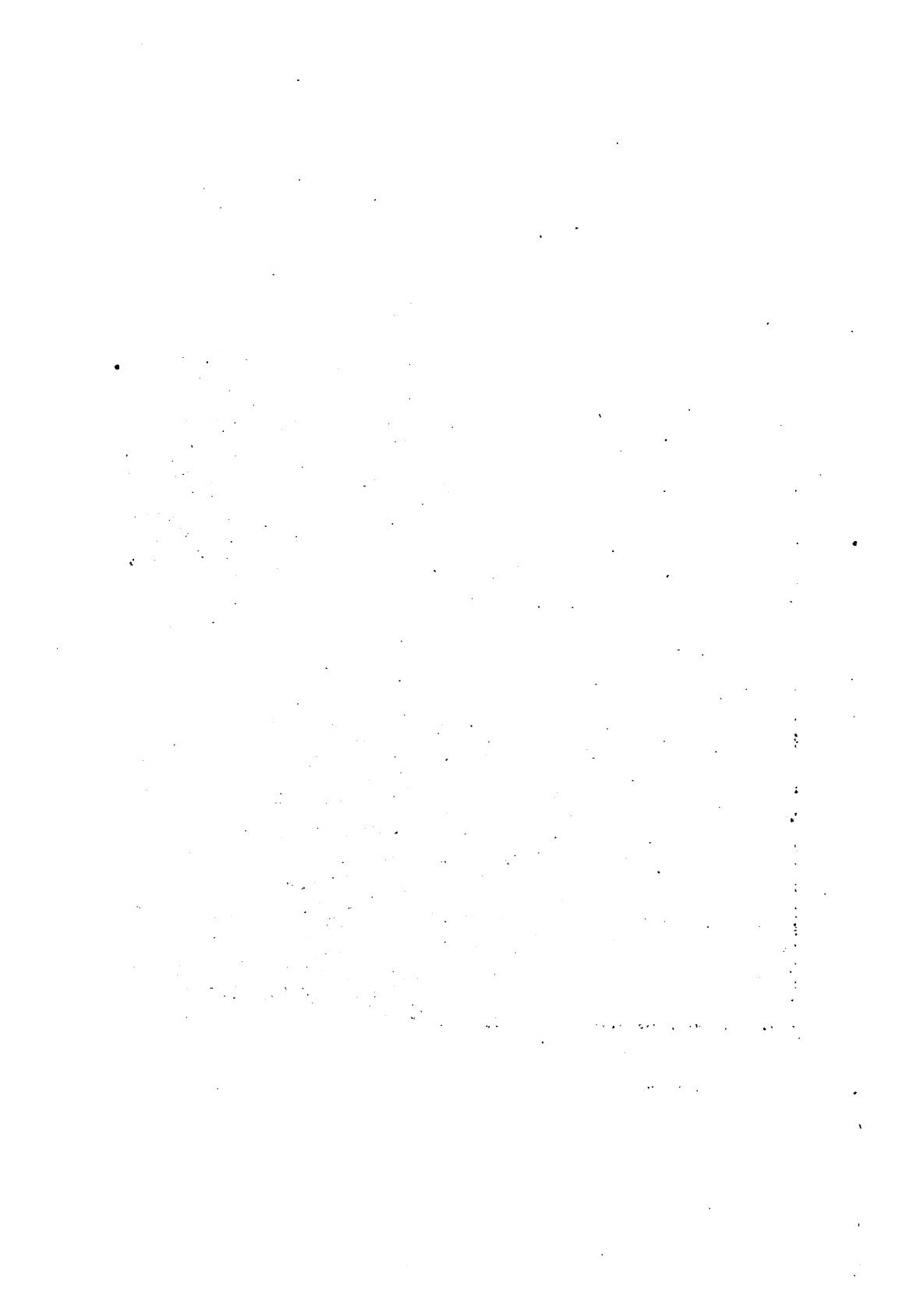


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DESIGN IN LANDSCAPE GARDENING

BY

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PREFACE

It has seemed to the authors that there is a real need for a book which will sum up, in a compact way, the most definite principles of design as applied to Landscape Gardening. As in all subjects relating to the fine and applied arts, very definite principles, rather than laws exist, though they are not always as easy of demonstration as the laws of physics and mathematics.

“I confess that the great object of my ambition is not merely to *produce a book of pictures*, but to furnish some hints for establishing the fact, that true taste in landscape gardening, as well as in all the other polite arts, is not an accidental effect, operating on the outward senses, but an appeal to the understanding, which is able to compare, to separate, and to combine, the various external objects, and to trace them to some preëxisting causes in the structure of the human mind.”—*Humphrey Repton*.

That such principles exist is not a matter of common knowledge or opinion, if one may judge by the

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PREFACE

unscientific discussions of landscape gardening which at the present time are appearing in unprecedented numbers.

It cannot be denied that landscape has a distinctly emotional value, but book-discussions of this nature have always seemed futile to the authors. Though considerable in bulk, these books are of slight real value because of their unsystematic recording of principles, and limited range.

This book is based largely upon lectures offered in the department of landscape gardening at the University of Illinois. The subject of plant color and the theory of color planting is given to the public with some reluctance. In spite of much time and study it still seems inadequate. The subject is, however, presented from a new standpoint and it is hoped that other workers in the same field may make much further progress along the way here pointed out.

Through this book the terms landscape architect, landscape gardener, and landscape designer, have been used interchangeably. There are strong partizans for each of these appellations, who can see no good in the employment of the other two. In the voluminous articles published in support of these views, nothing has appeared so convincing

PREFACE

as to prejudice the authors in favor of any definite and exclusive title. In fact they feel that bickering on matters of terminology where the subject matter is universally agreed upon is apt to denote a tendency to decadence, rather than to vigorous constructive work.

The authors are indebted to Professor J. C. Blair, Professor Charles Mulford Robinson, Professor H. B. Dorner, Mr. F. A. C. Smith, of the University of Illinois and Mr. G. R. Forbes, of New York, for their courtesy in allowing them to reproduce several of the photographs used as illustrations. Some of the illustrations, several of the plans, for instance, are copies made from the work of students at the University of Illinois. Some were redrawn, others were used exactly as presented. The drawings are the work of C. F. Kelley.

September 29, 1914.

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LANDSCAPE GARDENING

LANDSCAPE GARDENING

I

ELEMENTS OF LANDSCAPE DESIGN

At the present time in America people are much more sensitive to their home surroundings, as far as appearances are concerned, than they were thirty years ago. Then their intelligent interest stopped with bricks and shingles; now it is often carried as far as the street, and the grounds receive a fair share of attention. Perhaps one reason for this change is the American's ever-increasing amount of foreign travel, with the chance to behold not only the masterly gardens of antiquity, but those of modern times as well. By contrast, his own home surroundings have revealed to his educated sense their uncompromising ugliness.

General landscape-work is apt to appear long after the pioneer stage in any country. In the last twenty years, however, a strong school of landscape-men has risen in this country, and their work has been a very potent factor in the education of

public taste and the creation of a demand for intelligent landscape-designing.

It is necessary to recognize at the outset that love for nature, admiration of a beautiful view, and delight in the brilliant colors of flowers, are only a slight part of the equipment of a landscape-designer. These are essential indeed, but without further equipment the landscape-man will make pointless suggestions and create ludicrous designs.

In order to make a worthy design, discrimination must be employed, and that is always based upon sound knowledge and no slight experience. Consequently, the landscape-man must familiarize himself with all phases of his art, from the contagious diseases of plants to the proper methods of road construction. This is not the work of a tyro, nor of one who gushes about the sovereignty of Art, with a capital A, and proclaims his superiority to all rules. It is for the careful student, the well-balanced man of taste and cultivation, to find his work and pleasure in landscape-design.

In working out a problem in landscape architecture, the factors with which the designer is most concerned may be roughly divided into seven groups, which fall naturally into two large divisions.

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The first of these divisions may be called the esthetic arts, under which come architecture, sculpture, and painting.

The second division is termed the practical arts, which comprise engineering, agriculture, horticulture, and forestry. In the final results in design it will be seen that the esthetic arts have been used in a practical way, and the practical arts have been used in an esthetic way. A brief recapitulation of the members of these groups will perhaps place the subject of landscape-design in a clearer light.

ARCHITECTURE

Architecture has been defined as everything from "frozen music" to the "art of beautiful building." Whatever it may be, it must be useful as well as beautiful in order to fulfil its purpose satisfactorily. The rooms must be large enough to satisfy the requirements of practicability, and their arrangement must not interfere with their use. The outside of the building should express the inside, or the design will not be straightforward. It must be attractive in order to give pleasure to those who use it and those who see it. To that end every part of it, inside and outside, must be arranged to the best advantage. Stripping all

sentiment from the definition, it may be said that architecture is a study of composition in plan and elevation, practicability being an indispensable minimum requirement.

The plan of a building, which is the primary consideration, is influenced directly by the kind and number of rooms required; and in the exterior expression of the arrangement of these essential units the elevation must not only express the plan, but must harmonize with its natural surroundings.

If at this point the architect will consult an experienced landscape-designer, he will find his advice of great assistance. It is important that the landscape man's attitude should influence the placing of windows, since the outlook from a house should command all interesting and beautiful features, and omit all others as far as possible. The landscape-designer, from the very nature of his work, is sure to feel more strongly than the architect the importance of exposure and outlook. It is this which makes his advice on fenestration invaluable, and the character of the elevation will to a certain extent be made or marred by the placing of the windows. The appearance of the windows from without, which will affect the har-

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monization of the house with the landscape by which it is surrounded, is of equal importance with their outlook from within the house. This harmonization is often further to be achieved and perfected by the grading and planting required to make the landscape agree to some extent with the house, and this the landscape-man himself should do. As far as possible, the architecture should appear to be an integral part of the landscape. In other words, it must be "in character."

In landscape design, as in architecture, the plan is the primary consideration, and no progress can be made until it has been decided upon. It is influenced directly by the kind of problem and the particular requirements of the problem. To be successful, the elevation must express the plan, and must of course harmonize with the important natural features of the landscape. The result, whether formal or not, must appear to be spontaneous.

The main factor in the development of the design at this point will be the character of the lines which dominate the landscape. If the country is rolling and sparsely settled, as in most middle Western States, it is probable that a building with informal lines, asymmetrical and of a rambling

type, will seem most in keeping with the surroundings, and because of the absence of natural plant growth in the landscape, all planting features, in order to harmonize, must be used in connection with the building. If decorative planting is scattered, it will destroy unity of interest by breaking up the dominant features of the landscape, and the charm of the rolling country, as contrasted with the planting in the immediate vicinity of the house, will be minimized, with a distinct loss of beauty.

A natural landscape of an entirely different type is brought out to advantage by many of the châteaux of France and the castles of the Rhine, where the precipitous lines of the crags on which they stand are repeated in the graceful upshoot of the turrets and the steep and jagged pitch of the roofs.

In city building, of course, there enters a formal element which has not been taken into consideration in the foregoing examples. Here at once occurs the differentiation of the two types of landscape architecture, the formal and the informal.

In the city, lines are sure to be straight, rectangular, and artificial. There is a primness and an unnaturalness in the constructive lines of city



FIGURE 1. POMPEIAN GARDEN AS AN OUTDOOR ROOM

1701

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planning which it is necessary for landscape-architects to consider and to repeat in their designs. A certain stiffness in the arrangement of the planting, which would be entirely out of place in a country residence, is only to be expected here.

City planting, necessarily highly formalized, may consist chiefly in the arrangement of the trees and shrubs in a regular way or in the selection of formal types of plants. In suburban planting, where the location partakes both of the nature of the city and the country, more naturalistic types of planting may be introduced to advantage.

So much should the house appear to be an integral part of the landscape, and so thoroughly should the elevation express the plan, that if it is found that the elevation does not harmonize with its natural surroundings, it is certain either that it does not express the plan or that the plan should be reworked.

Architectural accessories, such as gates, steps, balustrades, walls, and pergolas, are often used as enriching features in landscape-design, and as such are frequently employed in a decorative rather than in a constructive way. Where judiciously introduced, they add dignity to the design.

SCULPTURE



Sculpture has always played a very important part in garden design, as well as in almost all types of monumental and public planting. Less formal than architecture, it may be used to great advantage as an accent with informal planting schemes, where it adds the element of contrast.

Sculpture was an important feature in the early gardens of Egypt. In the garden of the King of Thebes, for instance, it was used as a controlling element in the design.

In the Roman gardens of Pompeii (Fig. 1) and Herculaneum the sculpture was used in an axial way, appearing on the axes of corridors, walks, and streets, mainly as an accent, although frequently employed to enrich other garden features. The forms themselves were of secondary importance; their position and function was the prime interest.

The early Italian gardens employ sculpture in two ways. In the formal treatment hermæ served as an architectural feature at the intersection of walks and in connection with terraces, walls, and ornamental gateways. Informal sculpture, such

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as single figures or groups, was used with planting in the gardens where architecture was not the controlling feature or where the architectural element was at some distance. These same phases continue in the later gardens of France and England, as at Versailles, Fontainebleau, St. Cloud, and Wilton House.

In America sculpture has appeared at a disadvantage. It is used in a civic way rather than in gardens, and here, as a rule, it does not enter into the design of the park or square in which it is located, although it most certainly should. This sculpture is generally introduced from patriotic rather than from esthetic motives, as may easily be understood after the examination of a few examples.

In Washington, D. C., an attempt is being made to correct this incongruity between the sculpture and its surroundings by the rearrangement of planting and walks.

Lincoln Park, Washington, has been helped greatly in this way. The landscape-architect who directed the work did not introduce any new elements, but rearranged the jumble which he found already there, with most satisfactory results.

PAINTING

Various schools of painting have had a profound influence upon landscape design, particularly in England. The influence seems to have been exerted chiefly in the decorative composition of mass and space relations, as the silhouetting of planting masses against the sky and the types of planting. A book by Sir Uvedale Price upon the "Picturesque and the Beautiful," which appeared at the end of the eighteenth century, advocated the imitation of the work of Claude Lorrain by landscape-gardeners in their planting, even to the introduction of stumps and dead trees as a part of the scheme to lend a picturesque charm; he nevertheless admitted that formal gardening was best near the house. Here the romantic point of view seems to have been the precursor of the rustic monstrosities in cement and iron which unfortunately have a large sale even at the present day. In America the fad reached its greatest height about 1865. Cast-iron dogs, deer, and other sylvan creations must be laid at the door of painting rather than of sculpture, for the manufacturers of these *objets d'art* probably got their

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inspiration from the landscape-painters of the eighteenth century.

The landscape-designer may learn much from painting as regards the grouping of trees and their silhouette. He also uses painting as the most direct means of expressing his ideas to his client, for sketches of the general effect to be produced by his planting usually accompany the plans. Many ideas about color combinations and possibilities may also be gained from a study of paintings.

It will be seen, then, that architecture, sculpture, and painting are very essential factors in determining the solution of a problem for the landscape-architect, and are used by him in a practical way.

The second and final division of the problem of the landscape-gardener, which is composed of engineering, agriculture, horticulture, and forestry, may, for the purpose of this discussion, be termed the practical arts.

AGRICULTURE

In agriculture the landscape-architect is concerned primarily with the relation of the plant to

the soil. He considers carefully such questions as soil drainage and soil composition, from the physical and chemical point of view, to determine what plants are best adapted to each particular locality. This consideration is most essential in the planting of such species as the rhododendrons, which require that the soil contains no lime, but must possess the presence of humus. In soil drainage the landscape-architect is concerned chiefly with the draining of large areas for open lawns, leaving undrained spaces to be used for bogs and rock-gardens.

Agriculture is also concerned with soil cultivation, or the methods of caring for the planted areas in such a manner as to secure the best growth of plant materials. Another important interest included under the head of agriculture is plant pathology, under which come spraying and the control of insect pests.

HORTICULTURE

In horticulture the landscape-architect is concerned with a study of the plant as an individual, its growth, propagation, the formation of new varieties, pruning, spraying, and the best methods of planting and handling.

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Horticulture may be divided into two classes, the economic and the decorative. The decorative aspect is of chief importance to the landscape-designer, as the economic side appears only in such problems as the disposition of orchards and the screening of objectionable features. This last consideration is nevertheless of as much importance as the first, and is as much a question of esthetics as of economics.

The ornamental side of horticulture deals with all the plant materials used in landscape-gardening. The horticulturist groups these according to methods of growth, and classifies them according to size and soil requirements; but the landscape-architect primarily considers them with regard to form and color. Horticulture gives the landscape-architect the majority of the materials with which he has to work, for he is generally called in where planting is to predominate, and he must accordingly be thoroughly familiar with it.

ENGINEERING

Engineering in landscape problems concerns the lay of the land, the alteration of grades, the construction of topographical work, drainage, and the building of walks, bridges, and drives. Be-

fore the landscape-architect can begin his main design he must have a clear mental survey of the land with which he has to deal, and upon this he bases the large elements of his scheme; for thereby are determined the locations of such features as house, drives, gardens, and water. Furthermore, he readjusts the contours in an esthetic way, in order to obtain an even balance in cut and fill wherever possible.

In the laying out of roads, the natural profile of the road must so agree with the contour that the percentage of grade will not change too rapidly, and that later, when the engineering plan is worked out, too extensive cuts and fills will not appear, destroying the natural aspect of the surface.

In the erection of retaining walls there must first be a *raison d'être*, as well as justification from the engineering point of view, preventing too steep grades and terraces. Walls of other types are considered architecturally.

In the question of engineering drainage, the landscape-designer is concerned with the combination of surface and subsurface drainage. Surface drainage takes care of the water that is likely to destroy the best appearance of lawns and plant-

ing spaces, and subsurface drainage looks out for the draining of garden walks, tennis-courts, and the conducting of surplus water to proper outlets.

In considering the engineering features which have to do with topographical reconstruction, stable bridges, and well-graded roads, all these practical considerations must be subordinated to the esthetic ideal of the final appearance of the finished design. But if the practical considerations are satisfactorily determined, they will actually contribute to the beautiful solution of the problem. The esthetic side of the question cannot be treated as an easily detached ornament quite apart from any vital connection with the design. No matter how useful a thing may be, we do not care for it if it is ugly. Beauty is consequently the vivifying influence, the most potent factor in determining the design scheme.

If the designer will keep in mind in a broad way the subjects which have been classed in the practical and esthetic divisions of landscape, they will be to him a rock of strength in solving his problems. Too often a petty insistence on details makes one lose sight of higher, more important things, and ruins a design which has great possibilities for beauty.

II

DESIGN

It will perhaps be advantageous to give a brief summary of design in general before the specific subject of design in landscape is approached. The underlying principles of design are found in all branches of the fine and applied arts, and are the means of criticizing intelligently any object of design, be it a rose-jar or a landscape.

There are no such things as rules of design. One cannot learn a few formulæ and then turn out satisfactory work because of having gone through a certain number of processes and made a definite number of motions. The well-trained designer always has an attitude toward his subject which will direct him in his work. The acquisition of such an attitude is a matter of deep study, and requires a long time and a fine enthusiasm; and of course, as is the case with everything worth while, it will ripen and change gradually as the experience of the designer grows and his horizon broadens.

The designer's attitude is first one of intelligent wonderment, of inquiry as to the possibilities of the subject, and is attained through the training of the imagination. A designer who sees only one solution for every problem that comes to him is very certain to turn out inferior work. There may have been geniuses whose work was always the result of swift and sure intuition, but none of them is practising in landscape or any other branch of design at present.

Speaking generally, the question of use is first to be considered. Use may be defined in two ways, the practical and the esthetic. Of course all design is fundamentally practical, inasmuch as it aims to give the best solution of any problem with which one is working. Whatever is to be designed must perform its duties thoroughly; but that is not enough. It must also perform them gracefully, for the day has gone by when it was thought that objects of use need not be attractive. In fact, if a useful object is repellent in appearance its very ugliness often militates against its usefulness. Every solution of a utilitarian problem should appear to solve the situation so completely that one cannot behold it without a feeling of satisfaction. Thus beautiful surroundings of

one sort or another are created, and these in turn have a direct influence upon the lives of those who can see them and live among them.

If the design stops short with the mere fulfilling of some utilitarian purpose, it will probably not be entirely practical; it must be satisfactory in appearance as well as in use, or it will not attain the highest degree of practicability. Even though the roads be well graded, the bridges strong, the walks laid out in such a manner as to facilitate circulation, and the plant masses so located as to screen objectionable views or to enhance existing ones, the result may be beautiful; or it may be that the strong insistence upon practicability has made the function of the various parts too obvious, and the ideas of beauty, for which the design was created, have been lost. A great deal of study is often required in order that the finished design should appear unstudied, that is to say, spontaneous.

The esthetic and the practical should always appear together. It is no less necessary that the practical conjoin with the esthetic, in order that a work of design produce the greatest amount of pleasure.

A picture, for instance, may be very beautiful

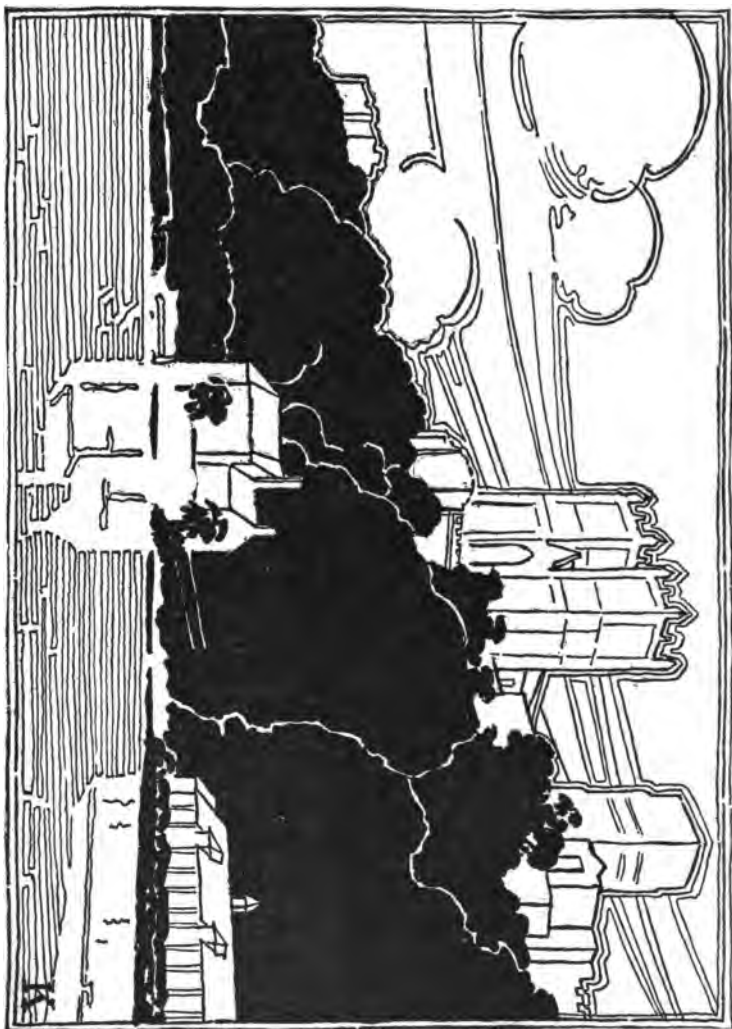


FIGURE 2. DURHAM CATHEDRAL.

in itself, and yet if it is hung in a dark corner, or where the light reflects from its surface so as to interfere with its enjoyment, it is decidedly out of place, and is therefore bad design. Design in this and every other case, as far as final usage is concerned, deals as much with the placing of the object as with the object itself.

In landscape, a plant grouping or a piece of sculpture, an architectural accessory or a vista, may be beautiful in themselves, but if they are placed in wrong relation to their surroundings, they are "bad design."

How is one to judge of the proper interrelation of the parts of a design? This is again a question of use. The province of a designer is to combine the material with which he has to work to the best possible advantage. Every part of a design must be placed where it can function freely and to the best advantage. It must not only perform its function well, but must *look* as if it did. Painters often meet with the reverse of this difficulty. In working out compositions where the human figure appears, they often find that it is impossible for the model to assume the supposedly graceful poses which had appeared easy to them when they were thinking only of lines and not of functions. All

true beauty is functional. It is said that the human body is beautiful because it expresses its functions well. The function, then, should always appear unmistakably, whether it be mainly practical or esthetic or both in combination.

It can safely be said that a beautiful design is never the result of chance. It is only in very rare cases that things have happened to be beautiful, at least so far as the handiwork of man is concerned. Wherever one is struck by a beautiful combination of landscape and architecture, whether it be Durham Cathedral, on its river bluff, dominating the landscape (Fig. 2), or the torii of Miyajima, enhancing the beauty of the sacred waters (Fig. 3), it is certain to be the product of consummate art, and not a happy accident. To be sure, the conditions of location were taken advantage of in both cases by the types of structure selected, but it was the accomplished designer who welded the diverse elements into a harmonious whole, and brought out in all its perfection the consummate work of art.

Design is an expression of man's attitude towards nature. It is universal, and the underlying ideas are the same in all cases. Since landscape design is only one of the kindred branches of gen-

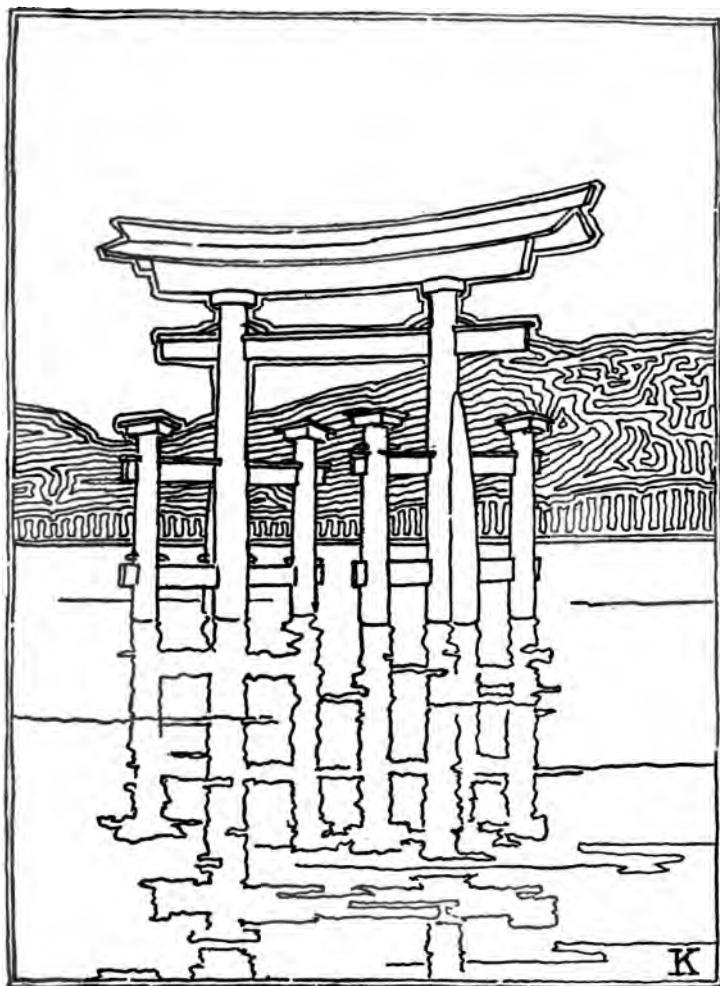


FIGURE 3. THE TORII AT MIYAJIMA, JAPAN

eral design, it follows that it is exactly like all the other provinces of design, such as architecture, painting, music, and literature, so far as general principles go. Its own individual characteristics are due to the fact that the landscape-designer has certain unique conditions imposed upon him by the limitations of his problem. These conditions are quite different from those with which his brother-designers have to deal, but he has also the satisfaction of knowing that he has certain glorious opportunities which it would be impossible for them to take advantage of in their respective fields.

Landscape design as an art is less artificial than any other form of design because it deals almost entirely with natural objects in formal or informal combinations. The landscape-designer uses trees and shrubs instead of spots of paint. He uses the real sky instead of an artificial representation of one, and his hills and ravines should appear as the results of natural forces rather than as man's creation.

In every form of design, structure, as a fulfilment of conditions, is of paramount importance. This structure may be the rocky framework of the landscape or the skeleton of a building. The re-

mainder of the problem, the esthetic treatment of this structural part, is a question of means to an end. No matter how much or how little enrichment appears, it must always recognize the function of the parts upon which it is built.

Landscape design in the abstract may be termed a problem in the composition of areas. Areas have only two dimensions, length and breadth; but for the final consideration of the design scheme the designer must constantly keep in mind the three dimensions, length, breadth, and depth. This is because the design is to be viewed from different points. In drawings and sketches, however, only two of these dimensions can be treated at one time. The plan and elevation must constantly be correlated in order to produce a satisfactory result, and different elevations should be drawn from the same plan.

The failure to observe this principle carefully is one of the great weaknesses of French architecture. A fine enthusiasm for beautiful geometrical design often permits the plan to become an abstraction, beautiful in appearance rather than in function, and from many aspects the elevations frequently appear weak. A building

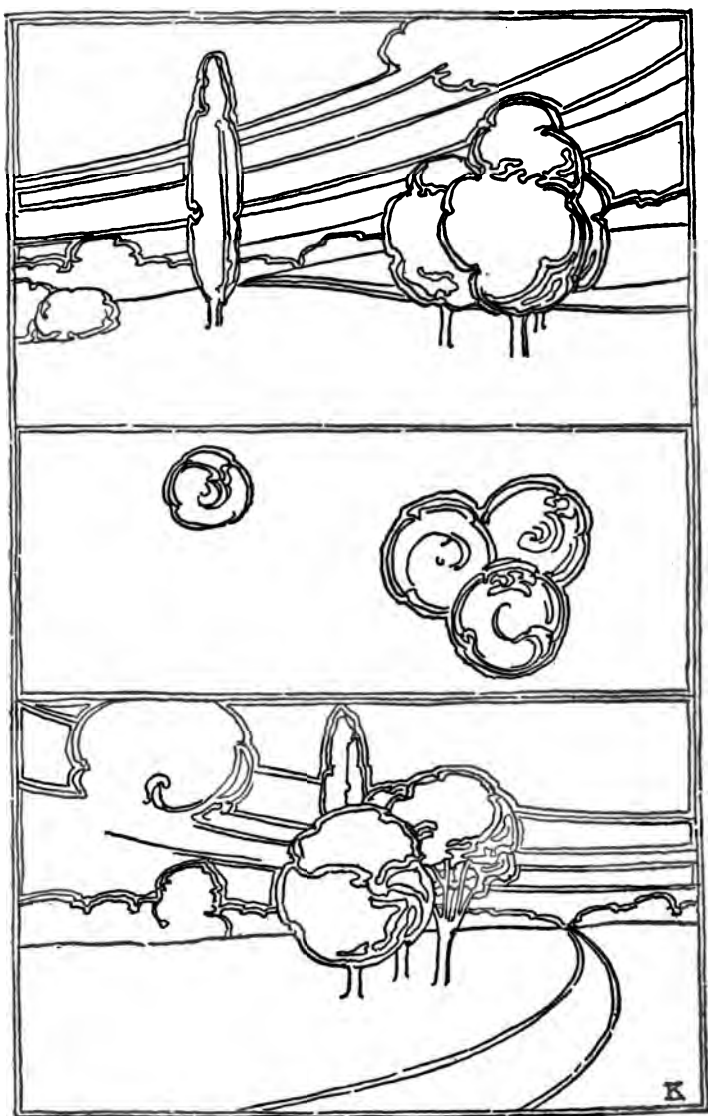


FIGURE 4. TWO DIFFERENT ELEVATIONS OF THE SAME PLAN

planned in such fashion is designed to be seen from only one or two stated positions.

The landscape-designer must prepare his work with much greater conscientiousness, since it will be seen from a variety of positions. If elevations are drawn from several different aspects, and all "compose" well,—that is to say, seem to have the proper space relations,—a satisfactory design in three dimensions is assured. This is Rodin's method of working in sculpture. He models entirely for the silhouette of his figure from all possible positions. This accounts in a measure for his magnificent results.

As may easily be seen in a photograph, all masses of three dimensions appear to the eye, or rather pictorially, as areas possessing only two dimensions. One actually beholds only width and height, for the impression of depth is an illusion.

Landscape design may safely be defined as the satisfactory and consequently beautiful composition of natural areas—shapes of earth, trees, and sky—in three dimensions.

As used in this book, the term composition means the "putting together" of certain various elements in such a way as to produce an appearance of unity and harmony. It is the assimilation

of all the different parts of a problem and their amalgamation into one underlying design idea. Every design should bear the stamp of man's handiwork, and yet the trees, shrubs, walls, roads, and other features should not appear to be "pressed into service." Any element in the design that is not perfectly assimilated and harmonized with the surrounding parts in accordance with the basic idea is not composed to the best advantage.

It is a matter of frequent occurrence that the client may wish to introduce elements quite foreign to the spirit of the designer's scheme, and these elements, though they may be either architectural or horticultural, will often seem hardly possible of assimilation. It is then a question of omitting such elements altogether or of ruining an otherwise satisfactory scheme. In case the element under consideration seems worth all the rest of the scheme, it necessitates the re-designing of the problem so that everything will harmonize, and the client's pet ideas will have an appropriate setting. This has often been done where some accessory, such as a statue, a well-head, or a fountain required "naturalizing"; that is, the designing of a favorable location so as to

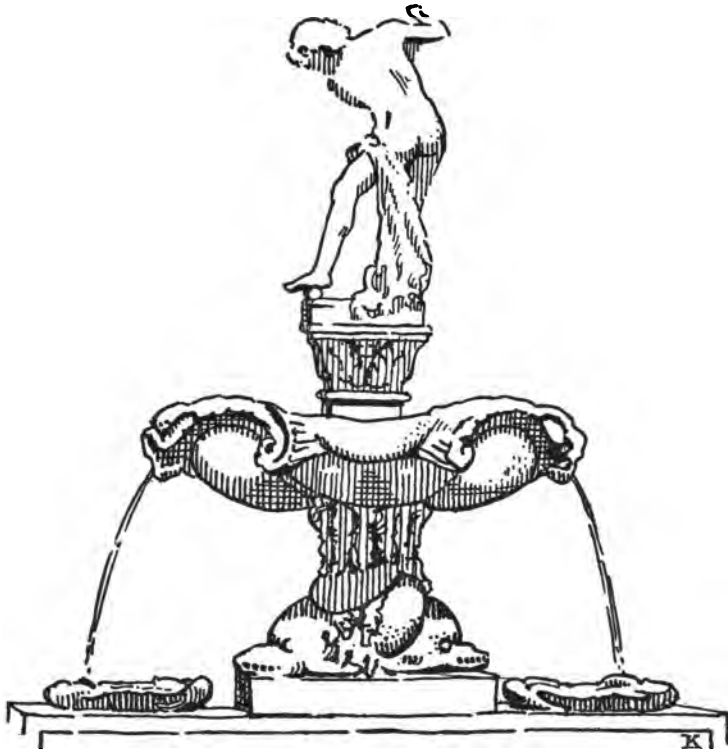


FIGURE 5. FOUNTAIN FROM THE BOBOLI GARDENS, FLORENCE, ITALY

make it seem in harmony with the surroundings.

This is illustrated in Figures 5 and 6. It is assumed that the fountainhead, which is one of the features of the big basin in the Boboli Gardens, has been transported to another locality, and is to

be used as the principal accent in a fair-sized garden. Two solutions of this problem are shown in Figure 6, the position of the fountain being indicated by a spot of black.

Certain garden accessories demand favorable

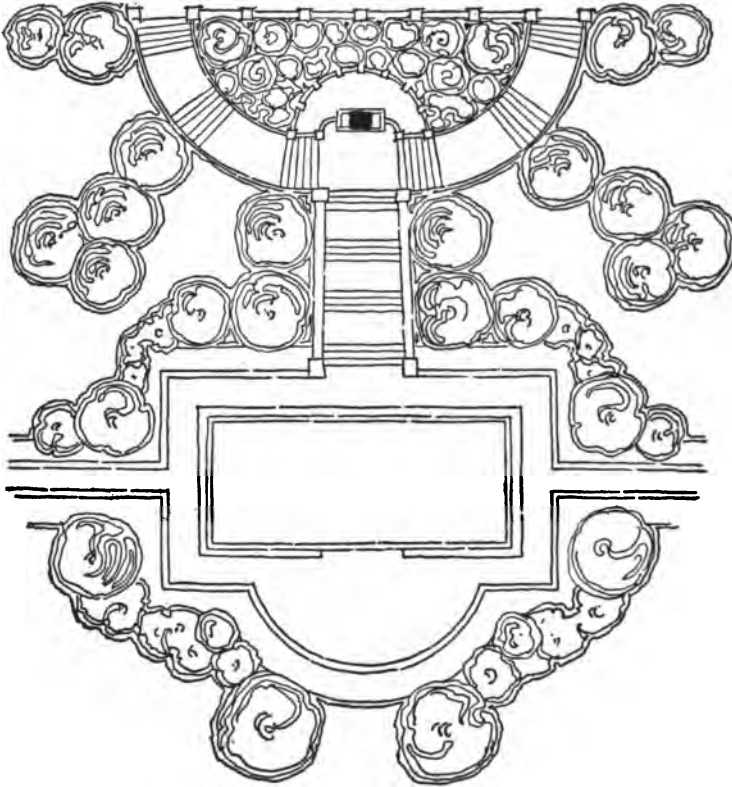


FIGURE 6A. SCHEME FOR THE "NATURALIZATION" OF THE FOUNTAIN FROM THE BOBOLI GARDENS (FIGURE 5)

location from their very nature. A sun-dial, to be of any service, must be placed in an open space, or it will not receive the rays of the sun. A statue, on the other hand, looks rather pitiable when exposed to the noonday glare, with no shade at hand. Any delicacy of detail is lost in a statue placed in an exposed position, as the reflection of the sun from its smooth surface is too dazzling to permit careful appreciation.

The naturalization of a feature may be carried to absurd extremes. For instance, an Italian well-head might be introduced into Norman-English surroundings. If the landscape-designer felt that the nationality of the well-head should be carried rigidly throughout the scheme, the result would be an Italian design which could not fail to be in discord with the dwellings for which the garden was intended. The well-head might, however, be considered as an exotic accent only, and in that case could be harmonized merely by colors and shapes. That would seem to be the only sensible solution.

The same principles of composition obtain in landscape that hold true of every other art: each part must be subordinate to the whole; every part of a design must articulate with every other part,

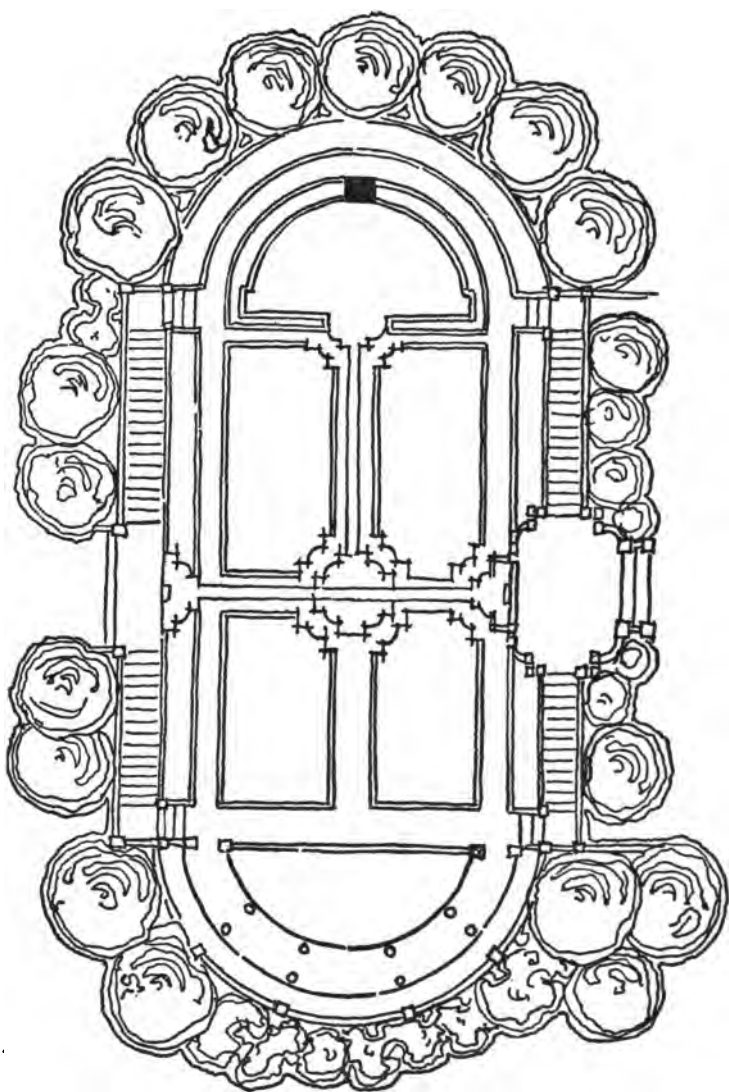


FIGURE 6b. ANOTHER SCHEME FOR THE "NATURALIZATION"
OF THE FOUNTAIN FROM THE BOBOLI GARDENS (FIGURE 5)

serving to enhance the entire scheme rather than insisting upon its own importance.

The disposition of areas in landscape falls, broadly speaking, into two large classes, known technically as the formal and the informal arrangements. In each case the handling of the areas is distinctive. The points of primary consideration are the same, whichever type of design is to be employed; but the style chosen determines the method of approach, which differs markedly in the two classes. Informal design may be called a study of space relations, and formal design a study of lines.

No one can listen to a conversation about landscape design, even for a very few minutes, without hearing the "formal and the informal schools" mentioned, probably with no slight degree of bitterness on one side or the other. It is the survival of an ancient feud between those who claim that every planting scheme should seem to be the work of nature herself, without suggestion or interference from man, and those who are equally positive in asserting that every piece of planting should bear the impress of the designer, nature being quite evidently subordinated to his will.

Those who really understand informal planting



Photograph by The Garden Cities and Town Planning Assn., London

**FIGURE 7. PLANTING TO BREAK THE LINE OF TRANSITION
BETWEEN A BUILDING AND ITS SURROUNDINGS**

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have no quarrel with the formalists, if only they will admit the usefulness of the informal school. It is the sentimental "landscaper" who has slid over the surface of things who alone is bold enough to state that nature will take care of herself in a harmonious fashion about the artificial habitations of man, though unrestricted in any way. It must be a very crabbed and perverse formalist who will not acknowledge the beauties of informal design, and it must be an equally narrow-minded informalist who will admit no good in the opposite school. At any rate, the extremists run the best chance of being misunderstood.

The conditions governing a problem, such as location, use, extent, topography, and other existing natural surroundings, the style of architecture, present or proposed, and the taste of the client, will determine the style to be employed.

In most cases it is very desirable to use native material in planting rather than to go far afield, though the fact that a specimen is indigenous to a locality is not sufficient in itself to warrant its use in a planting scheme. Its shape, color, or habits of life may unfit it for use in the particular type of problem in hand. The golden elder, *Sambucus*

Canadensis aurea (Fig. 34), which, it is said, was first found growing native, would not harmonize with a typical native planting scheme in any case, but could be made to harmonize with a more gardenesque-like treatment. Sumac, with its irregular branches, brilliant coloring, and general informal appearance, would not do at all for city planting.

In the city home the selection of trees and shrubs is not controlled by natural features, such as existing plant material and contours, for city conditions are artificial, and a naturalistic treatment would serve only to accentuate the artificiality. Evergreens, provided they can withstand smoke conditions, may here be used to advantage, considering them as units of a whole mass rather than as a natural part of their surroundings. They seem to have an inherent stiffness which fits them for artificial conditions.

Trees and shrubs in city planting are useful only for contrast of form and color. Woodland conditions would seem as much out of place in stiff city surroundings as would a collection of topiary work and hybrid roses under natural forest conditions, because its very nature would lead one to question its appearance among such uncongenial

surroundings. One would wonder, despite himself, just how much per foot the land was worth which had been devoted to the growing of lawn grass, and this would interfere with a sense of enjoyment. The informality of appearance of a lawn of any extent among piles of stone and brick, city traffic, smoke and noises, would create somewhat the same impression as white flannels at a formal evening party.

On account of the different conditions which prevail, a specialized plant may be used to advantage in the city, while its type is more suitable for the country, because its hint of artificiality will more readily harmonize with the surroundings. Nevertheless, only such trees and shrubs as will withstand smoke conditions can be used in civic planting schemes.

The surroundings of all dwellings should partake at least in some measure of the artificiality of the architectural features, for this tends toward unity. The line of division between the turf and the buildings is always harsh, and something should be done to soften the transition and make it more gradual. This can be accomplished by the use of vines, which will climb over the sides of the house, or by grouping shrubs about the founda-

tion. In this way the house will seem to be more closely welded to its setting (Fig. 7).

It is remarkable to note how few people have grasped this very simple principle. In many of our cities, particularly in the Middle West, it would seem as if the owners had scraped away from the building all planting possible, and deposited it at a safe distance, for as a rule none of the plant material seems to bear any relation to the building itself. (See Fig. 39.)

The architect can often help in making a building suitable for planting. For instance, in architectural gardens a simple wall treatment will be more in keeping with the composition of large areas than a more complex handling of the architectural surfaces. But where the planting is restricted to a few varieties and is elaborated only by a careful selection of accent plants, the wall surface may be designed so as to attract more attention than in the preceding instance; for this may be done without danger of competition between plant and architectural features.

If a complex and conventional treatment is imposed by surroundings, it may be more readily expressed when formal planting lines are the ruling factor. Planting and architecture, when used to-

gether, are interdependent, and must possess similar characteristics.

Walls emphasize the architectural features, and in planting a walled garden care should be taken that the plants are not out of scale with the garden by being too large or too small. On account of the dominance of the walled inclosure, it is not necessary to insist too strongly upon repetition in the planting; consequently plants used in a garden scheme of this type may be more gardenesque and highly specialized, both as regards the filler and accent shrubs (see planting chapter). Contrast, always an element of interest, is gained by this arrangement.

The use of walls, gates, stairways, balustrades, and other constructive and decorative features concerns the landscape-designer as much as the architect, and he has every right to use them as freely as plant material wherever the occasion warrants. He may use a wall instead of a hedge, or substitute steps for a grade wherever the formality of architectural surroundings seems to demand. While the major emphasis is here laid upon plant material, it is not intended in the least to minimize the importance of architectural features in landscape work.

Naturalistic planting does not necessarily imply the use of the informal style, nor does formal planting necessitate topiary work and parterre bedding. In many cases, such as Thomas Circle in Washington, D. C., bedding plants are used to their best advantage amid formal surroundings. In fact, conditions like these are best for the use of bedding plants, inasmuch as they will withstand city conditions, and on account of their formality and very evident subordination to lines and forms, they possess the requisite stiffness and precision.

Most people, when seeing a bit of greenery, think only of the interest of the plant itself, whether it be worthy or not. The idea of something growing finds a ready response anywhere, and consequently naturalistic planting within city limits would detract from the building or monument with which it was associated. Any very evident grouping and clipping of bedding plants to produce a certain definite effect leaves no doubt in the mind of the beholder as to just what the effect was which the designer wished to produce, irrespective of the success of his design.

While, theoretically, the trained landscape-designer should have an absolutely free hand, and should know which scheme of all others would be

best suited to his problem, the tastes of his client must nevertheless be taken into consideration to a greater or less extent. Here the determining factor will be the balance struck between the tactfulness of the designer and the obstinacy of the client.

Every design scheme has natural limitations which clip the wings of imagination, and the tastes of a client who has little or no education along esthetic lines is a limitation second to none. Moreover, the difficulty will be increased by the fact that people who have little esthetic development are seldom aware of this lack. If the designer is able, by broad training and experience, to produce in such circumstances a result that will please a comparatively uneducated taste, and yet appeal as beautiful to those who understand the subject, it should be a source of greater satisfaction to him than if he had had a free hand, and no limitations with which to cope. A designer who conceives a scheme without consulting his client's tastes and wishes will meet with occasional disappointments, and he certainly deserves to do so.

All types of design deal first with the total area of the problem as a boundary line. In the formal type this area is to be cut up and divided into

smaller areas by means of lines. In this connection, walls, hedges, walks, or bedding (Fig. 8) are considered as line-divisions. The line is therefore the dominant factor in the disposition of the areas in the formal type, and attention is paid rather to the arrangement of the material employed than to the character of the material itself. Accordingly the areas in formal design are close, compact, and severe, and the planting is restrained (Fig. 9). The idea is to create certain shapes which shall serve the purposes of practicality and beauty, but the internal composition of these masses is a matter of decidedly secondary importance. It is a design of form rather than of color, and the individual interests of plants are not considered of much moment.

A greater freedom characterizes informal design both in its arrangement and in the class of the material used. Line, the outlines of areas, is here considered as subordinate to the mass or area itself, and is studied only after the areas have been placed in proper relationships. The large areas, whether considered as planting masses or as open lawn, may be moved about freely so as to appear to the best advantage within the limits of the property before the character of their own boundaries

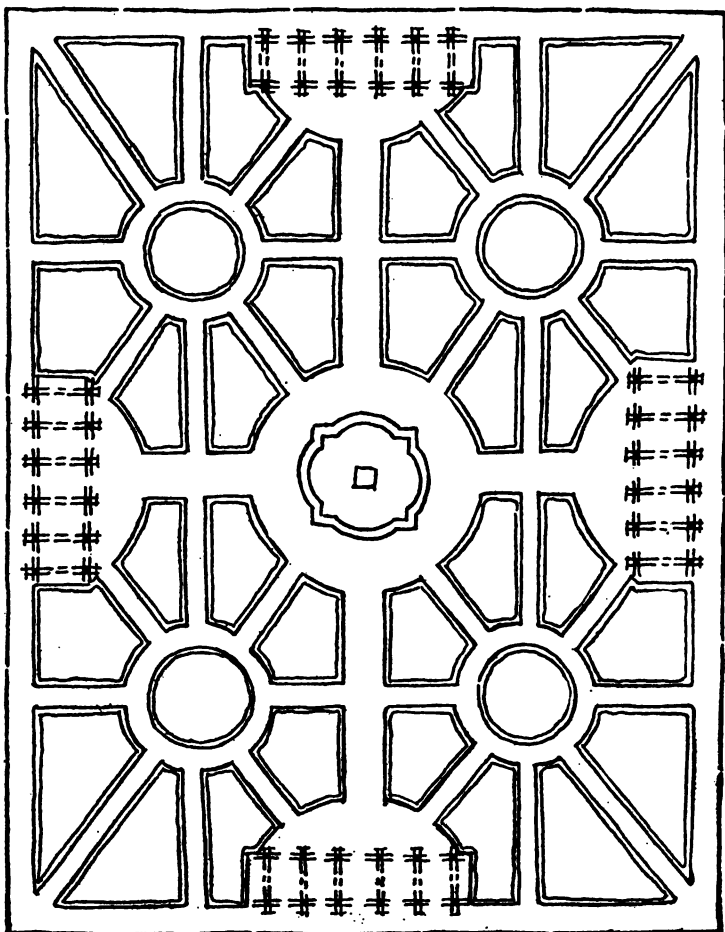


FIGURE 8. A FORMAL PLAN SHOWING STRONGLY MARKED GEOMETRICAL CHARACTER OF DIVISIONS

as lines is determined upon (Fig. 10). Of course this is all done in rough preliminary sketches, only sufficiently accurate to convey the idea.

This does not mean that there should be a careless and unstudied use of line in informal design. On the contrary, it is often more difficult to design satisfactory lines of this type. Freedom in appearance is not always the result of spontaneity.

Briefly, the major differences may be thus summed up: in the informal school line is determined by the mass, and in the formal school it is the mass which is determined by the line.

The Japanese school of landscape is often differentiated from the formal and informal types. It will be found, nevertheless, upon analysis, to be merely a strictly informal type used upon such a small scale as to give the appearance of formality. It is a design of irregularity, but very highly conventionalized (Fig. 11).

The popular opinion of a Japanese garden seems to imply the presence of a stone lantern or two, a few irises, a straggly wisteria, and enough water to "explain" the presence of an unstable bridge; also the idea seems to prevail that these need not be at all in harmony with their surround-



Photograph by Anderson

FIGURE 9. GARDEN—AS AN OUTDOOR ROOM, VILLA ALBANI, ROME

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ings. Now, the Japanese garden proper is a very beautiful and carefully constructed thing, the result of years of traditions and Oriental conventions of life, which cannot at once be grasped by the Westerner, but will richly repay a careful study.

Most of the Japanese gardens found in this part of the world are treated faddishly, as stage property or pieces of scenery, and consequently they cannot be considered as the outgrowth of conditions. In fact, some essentially Japanese detail is often introduced into an entirely foreign scheme—an Italian garden for instance—in such a way as to spoil both the intrinsic beauty of the detail and the whole garden scheme as well.

If a carefully designed Japanese garden is secluded, and so placed as to be seen by itself alone, as it would be under native conditions, it can be used anywhere for its individual interest and picturesqueness. It cannot, however, be used as a part of an ordinary garden scheme with any degree of satisfaction.

In both the formal and the informal types there must be some dominant design idea with which the rest of the scheme must be harmonized, and this is true of all design, as has already been insisted

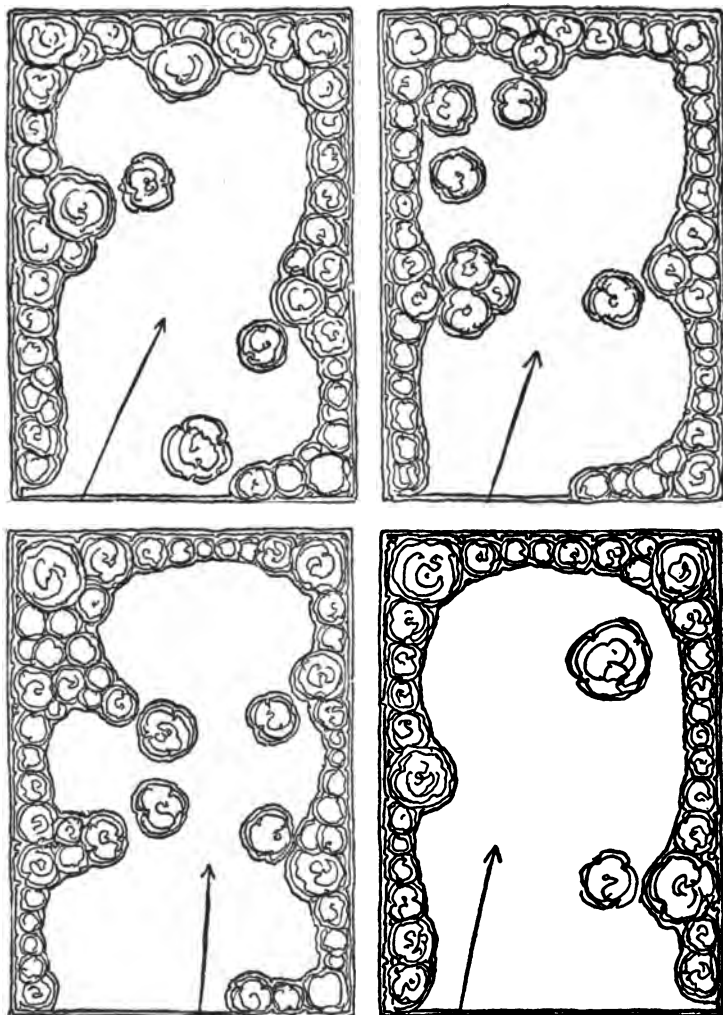


FIGURE 10. INFORMAL PLANTING PLANS

upon. This is the principle of unity, the subordination of all parts to the main scheme.

In the formal type of planting, architectural lines will probably be emphasized, while the informal type will lay greater stress upon the horticultural features.

In the garden at Wilton House, for example, the architecture is quite the dominating note, the plants being used simply as spots of color for decorative purposes and not for any intrinsic interest. The very formal architectural terrace depends for its adornment upon statues and vases, and descends to a formal inclosure, which is walled, and accented in like fashion with vases and statuary. A naturalistic tree bank in the background renders the accent of the dividing-wall very marked. If the treatment within the wall were as naturalistic as is the exterior planting, the wall would seem entirely useless and out of place. Any planting within the inclosure must appear as restrained and severe as the inclosing wall, or it will not be in keeping with the whole. Conversely, if the formal planting stopped short at a naturalistic tree mass without any defining wall, there would be a shock. But the problem is well handled. The space is divided geometrically by

walks, with sharply accentuated edges, and no matter how brilliant the colors within the planting areas, all shapes have been subordinated to architectural lines, and no plant is used for its individual interest. This is an excellent example of restrained planting.

In the informal Sargent planting at Holm Lea, Brookline, Massachusetts (Fig. 12), it will be seen that Mr. Sargent's interest as a botanist has led him to group the rhododendrons about the pool in such a way as to focus the attention upon them, and their reflection in the water serves to enhance their charm by doubling the effect of the color mass. Here, of course, the accent is horticultural. The special characteristic of the rhododendrons is their bright blossom masses contrasted with the dark, shining texture of their evergreen foliage. This is admirably brought out by their setting in the planting scheme. (See Frontispiece.)

When accent is required in a horticultural way, it is frequently attained by the use of a plant the distinguishing characteristic of which is quite noticeably different from those of the plants which form its setting. Horticultural accent is secured by selecting a plant the characteristic of

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FIGURE 11. A JAPANESE GARDEN

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which will appear to the best advantage under the conditions imposed by the problem in hand. The necessary accent may accordingly be secured by change in the scale, form, texture, color (leaf, twig, or blossom) where mass planting is concerned, and by more elusive qualities, such as individual leaf shapes and twig forms, where the plant is isolated. In massed planting the accent must be strong. If the prevailing lines of a shrubbery mass are low and rounded, the introduction of a Lombardy poplar or two will give accent by change of scale and form as well. A catalpa will give accent not only by the coarse texture of its foliage, but by the large masses of white blossoms in early summer and the still more interesting pods in the autumn. Both the texture and the color of the purple beech recommend its use as an accent plant. On account of brilliant autumn coloring, its distinguishing characteristic, the tupelo-tree is often planted with hemlocks, to make the most of their contrast. Many other examples might be given of similar planting practices.

A thorough knowledge of the plants at one's disposal, and their characteristics, will be indispensable in suggesting means of accent to the de-

signer when he is considering horticultural accents. As a rule, the nature of the accent is first considered in the abstract. For instance, a scheme might require an accent plant which should be tall, slender, and of rough texture, with a general red tone. So much decided upon, it is then a question of choosing from the plant materials at one's disposal the variety which will come nearest to satisfying those requirements.

Since the use of line differs markedly in the two schools, it results that in the formal style any change of line, however slight, will immediately affect the areas in their integral relations. Every walk and plat or parterre is bounded by a definite, hard dividing-line, and those lines are the constructive framework of the design, because they are always placed with definite relation to axes.

As the entire design may be seen at a glance in formal work, it follows that the mere altering of the width of a walk will change the proportions of the bordering area, and the divisional proportions will hence assume an entirely different appearance. Consequently, where an example of the formal type has been successfully carried out, it should appear so complete and exact as not to

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FIGURE 12. RHODODENDRONS IN THE SARGENT GARDEN, HOLM LEA, BROOKLINE, MASS.

permit of any change in the shape of the planting areas or the width of the walks.

In the informal type considerable changes of outline may be made without materially altering the general appearance. In Figure 13 the arrangement of units is entirely dissimilar, and yet the appearance in elevation would not vary much. The charm of informal planting is closely bound up in the silhouette of its elevation from all different points of view; therefore the outline of the plan of the planting masses seldom attracts much attention. Accordingly the width of planting areas in informal design may often be considerably changed, when necessary, without affecting the general scale.

The irregular boundaries of informal shrubbery masses may easily be altered even to the extent of moving them several feet to give greater freedom of approach, or for some other utilitarian purpose, without causing any marked change of appearance in the masses themselves.

The formal type, where the whole garden scheme is perceived at a glance, is successful or not chiefly on account of its plan, but the strength of the informal type lies largely in elevation.

Since the final result of every design must be a

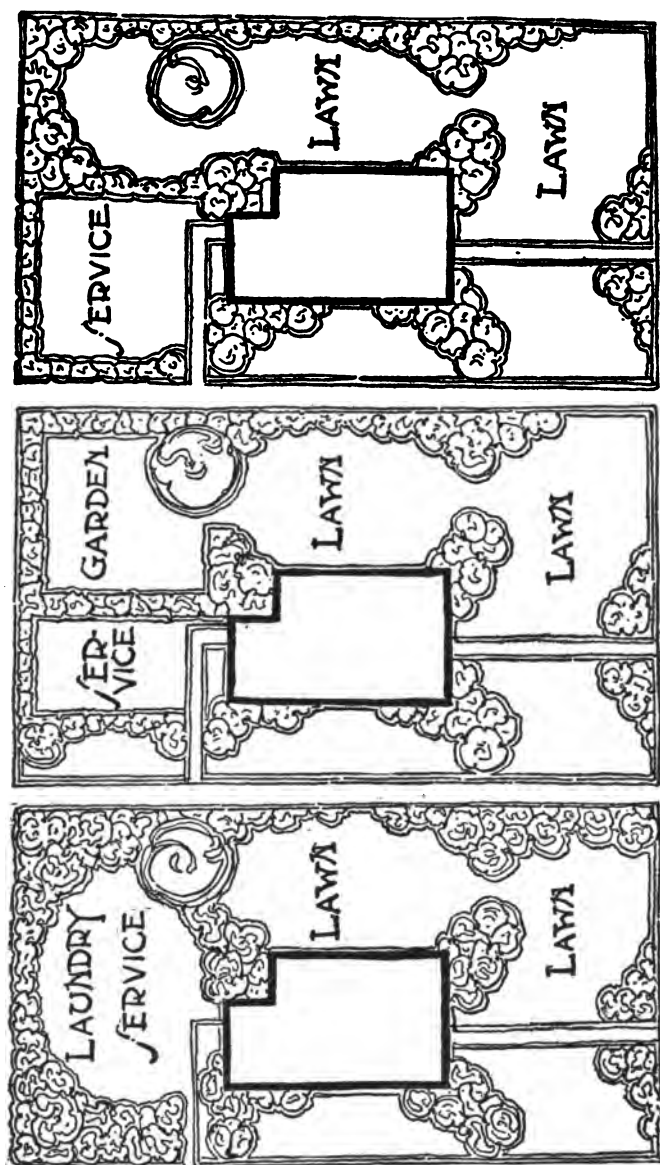


FIGURE 13. THREE PLANS TO ILLUSTRATE THE FLEXIBLE CHARACTER OF INFORMAL PLANTING MASSES

balance, the whole process of designing is toward this end. The balance is either very regular and striking—understood at a glance, as in a geometrical figure—or it may be more a matter of gradual appreciation, as in a Japanese print.

These two types of balance, the obvious or symmetrical, and the occult or unsymmetrical, are illustrated respectively by the formal and informal schools (Fig. 14), and the balances are perceptible both in plan and elevation. Formal arrangements are generally geometrical, simple and symmetrical, so far as the structural lines are concerned, while the informal are more complex, irregular, and seldom in the least symmetrical. Formal arrangements are generally in pairs,—that is, are bilaterally symmetrical,—while no exact similarity will appear in an informal one. The general primness imposed by geometrical figures is exactly in keeping with the spirit of a formal garden, but is quite at variance with an informal scheme, the charm of which lies often in a sort of waywardness.

It must be remembered that informal design depends upon details and is generally seen in parts; it may consequently consist of a number of more or less independent balances which should of

course appear complete, though none of them will be symmetrical. The formal scheme, presenting one large and very obvious balance, may be seen in its entirety at a glance.

All design is based upon repetition, and all design is consequently similar in so far as its appearance is affected by the laws of repetition. The diversity of the materials employed to express the laws of repetition in different forms of design is that which confuses the beginner.

The laws of repetition may be divided into three principal parts: sequence or simple repetition, rhythm, and balance.

A design should first of all possess unity; that is to say, it should "hang together," and not appear as a jumble of separate parts. This necessitates at the outset a certain amount of repetition, and in consequence it is necessary that some one element be common to all parts of the design. Of course, if too many elements are possessed in common, there will be no variety, and the result will be perfectly monotonous. Repetition applies to the forms, sizes, colors, and positions of all materials used (Fig. 15).

It is not necessary that plant materials should be alike in all respects, but only that more of their

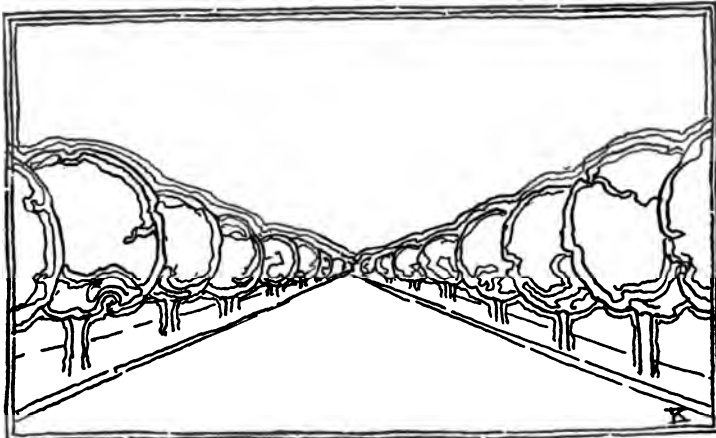
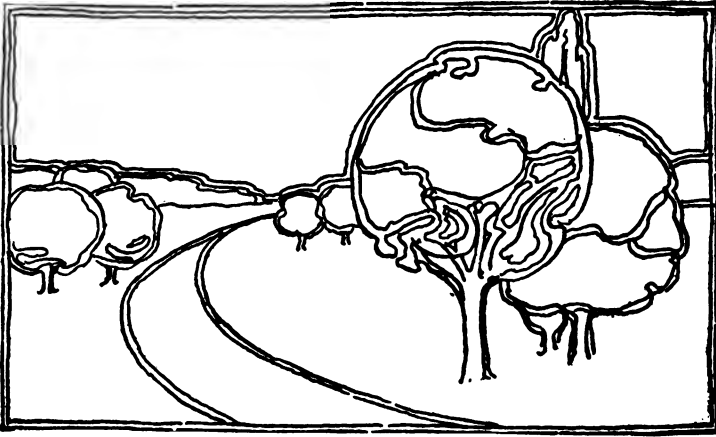


FIGURE 14. INFORMAL AND FORMAL BALANCES

characteristics should be alike than not, in order to secure conditions of sufficient monotony to produce an appearance of quiet and rest.

When architectural features are used as garden accessories, or to fulfil some similar function, it is not necessary, or indeed really desirable, that all be exactly alike. The general masses should be the same, but the details may differ considerably. The large shapes, by their similarity of appearance, will insure the unity of the design, while the different fancies indulged in their details will claim the attention and give a charm of variety in such fashion that the element of variety will not conflict with the main idea.

On both sides of some of the long leafy avenues of Versailles statues occur at regular intervals for considerable distances, serving to act as accents, and to emphasize the idea of distance by calling attention to the perspective. The statues tell as light masses against a dark background from a slight distance, but on closer examination all are found to be different, each attracting by its individual charm.

If the balance achieved in a design is the result of monotonous repetitions only, it will be a sort of lifeless thing, a static equilibrium. If rhythm is

introduced, however, a dynamic equilibrium will result, giving to the design a new vitality.

✓ Rhythm is the enlivening quality in design, and embodies the idea of change or progression; it is usually produced by changes of sufficient regularity to lead the eye in one direction or the other, refusing to let it come to a full stop.

A perfect example of rhythm in nature is the rolling surface of the ocean, with all its waves recurring at regular intervals, but nevertheless carrying the eye in one direction with a powerful sense of motion. If one looks down a long avenue of trees of regular height, the diminishing perspective creates a powerful pull upon the attention, and the gaze is focused at the distant point where they seem to meet. A rhythmic setting of this sort is used for special features on a larger scale, for it is a well-established custom to place an imposing structure at the end of a regular vista.

Carpeau's fountain (Fig. 16) is at the front of a vista, and yet the enframing trees set it off powerfully in the same fashion. The rhythm in this case is due entirely to perspective.

Rhythmic quality may appear in lines, in the shapes of areas, or in colors. It may be a recur-



FIGURE 15. REPETITION OF SIMILAR TREE FORMS, HILL-TOP,
FIESOLE, ITALY

rence of accents which must differ sufficiently to express development, or it may be an undulating line like a river-bank, which compels the attention to follow it.

The growth of plants is always rhythmic; the boundary of an informal walk should be. The word rhythm has been used in so many different ways that it has a number of loose connotations, but for the purpose of landscape design, as treated in this book, rhythm will mean the regular recurrence of an accent of some sort, which entails the idea of change. Repetition—sequence, rhythm, and balance—is the foundation of design.

In solving a practical landscape problem, repetition is not taken into consideration until its appearances are to be determined, and this cannot be done until the economic side of the question is settled. First will come the arrangement of all the parts for the greatest practicability, and this is fixed in designing the plan. The study of this plan means the arrangement of all its elements in such a way as to obtain the maximum of practical and esthetic fitness. It is the plan which determines finally the position of all the members of the design.

The first thing to decide will be position of

buildings and architectural features, both in relation to each other and to the surrounding landscape. In studying the positions of the architecture, pleasing views must be taken advantage of, and objectionable ones eliminated as far as possible. One does not care to gaze from his library window upon a populous and curious chickenyard, nor yet upon a collection of service buildings, no matter how neatly they may be kept. A railroad, newly made land, or slatternly neighbors may require "screening," for one should, wherever possible, look out upon pleasant surroundings. This is called the design of the "off-scape," and is of the utmost importance.

Medieval castles, wherever possible, were built upon rocky peaks, as much for ease of defense as to allow their owners a wide survey of the surrounding country, in order to recognize the approach of danger at some distance. Although they commanded a remarkable view, it is quite probable that it had no esthetic appeal to the "robber barons."

Defensibility in the Italian hillside gardens was no object, but the view was, and the garden was consequently placed in a commanding position. The result, so far as location is concerned, is the

same in both cases, although the determining factors were practicability on the one hand, and pleasure purposes on the other.

After some idea of the general requirements of the problem in hand has been gained and the buildings have been located, the next important step is the placing of the principal areas,—the kitchen-gardens, service-courts, stable-yards, and so on, in regard to their greatest usefulness and availability. The position of these larger units will then determine the placing of the smaller masses that are generally of greater esthetic interest, and are intended to bear close scrutiny.

The next consideration is the circulation; that is, the disposition of walks, drives, and approaches. The careful placing of these is most essential, as they determine the points of view from which the design is to be visible, and esthetically are consequently of the utmost importance. If they are not likewise laid out in a practical fashion,—that is to say, so as to facilitate progress and to segregate traffic of a utilitarian nature,—paths will be worn over grass plots in a manner most disturbing to the designer, though he should really accept the situation meekly as a well-merited rebuke.

The basis of the design scheme in every piece of landscape work is geometrical, whether symmetrical or not, and the first consideration in designing the circulation is the handling of the traffic in the most convenient way. Once laid out, the lines of traffic determine the disposition of the planting masses and open areas, and have therefore a double significance. Particularly is this true of formal design, because the interdependence of circulation and planting is very evident in this type of work; a formal design looks either right or wrong at first glance.

Informal divisions allow much more latitude than the formal because experience has shown that the number of satisfactory ways in which rectangles may be formally divided is few. Although curved lines are sometimes employed in the formal style, straight lines are characteristic, and the angles are generally 90° .

In the accompanying illustrations, rectangles are shown in formal and informal divisions. In Figure 17 the square is divided symmetrically. Numbers one and three show ways of dividing by simple lines, and number two is a combination of the motives found in one and three. It will be noticed that all the lines are parallel



FIGURE 16. CARPEAU'S FOUNTAIN, LUXEMBOURG GARDENS, PARIS

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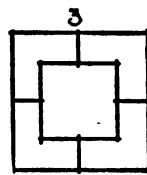
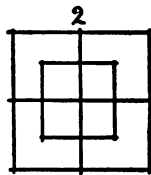
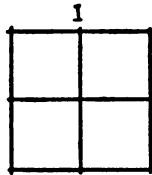
Mr. Tol

with the sides of the square. These lines may also be parallel with the diagonals, which gives a certain amount of variety, although the scheme is virtually the same, and sometimes both may be found in combination where the scheme is large (see Fig. 8). The methods of division shown in Figure 17 seem to be the only satisfactory ones for the formal subdivision of squares.

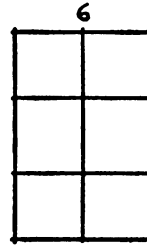
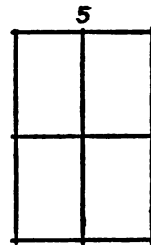
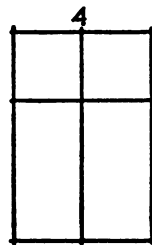
Where oblongs are divided parallel with their sides, the line of division across the short dimension does not often occur in the middle. This is seen in numbers four and six. Number four is a scheme frequently employed where a feature is introduced at the intersection of the axes. A spectator who is on the greater division of the long axis, in looking toward the cross axis, is likely to think that the cross axis bisects the plot, and thus an appearance of greater distance is imagined. Where the area thus divided is restricted, the device is often very useful.

Another frequent method of division is based upon two cross-axes, as in number six. Other subdivisions such as those in numbers seven, eight, and nine are applications of numbers two and three. Subdivisions by geometrical lines are very simple in the formal style, but all sorts of elabora-

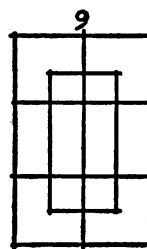
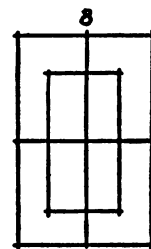
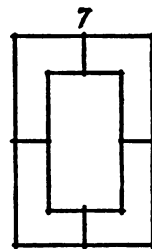
THE GEOMETRICAL BASIS OF THE PLAN IN LANDSCAPE DESIGN



SQUARES



RECTANGLES



RECTANGLES

FIGURE 17. THE GEOMETRICAL BASIS OF THE PLAN IN FORMAL
DESIGN

tion within the main divisions may be made by parterre bedding.

The subdivisions of rectangular plots in the informal style (Fig. 18) is a much more difficult task, and one which has not been crystallized into definite form. Every division is made solely on its own merits, considering it in relation to its surroundings. The points of entrance to such a plot are located and numbered according to their relative importance, which depends upon the number of people that uses them, and the frequency with which they are used. If there are two points between which the greatest amount of passing will occur, the path or drive between them should be fairly direct, in order to save time and annoyance.

In Figure A the three entrances marked 1 are of equal importance, but there is another entrance (2) which is occasionally used. The comparative infrequency of use of 2 does not warrant a path directly across to 1 on the opposite side, although it does necessitate a curving of the path between the other two points in order to allow easy access to the exits on each side.

In Figure B there are several entrances, with three degrees of importance. It is necessary for the paths to connect the most important entrances

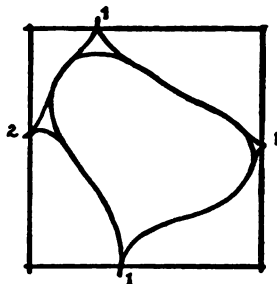
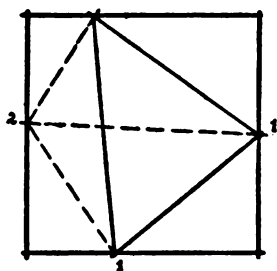
(1) without much deviation. This brings the circulation near to points 2 and 3, which may be connected without much trouble. Point 4 is not important enough to warrant the deflection of the path between points 1, and consequently it has been given a separate communication. The same principles have been followed in the laying out of Figure C.

A garden may be so designed as to become a part of the household for use as a sort of outdoor room (Figs. 9 and 53). A room of any description must be more or less formal in its bounding lines, and if too great a change is experienced in passing from the house to the garden, there will be no feeling of unity. Consequently a garden of this sort is bound to bear the stamp of the formal type. If the garden is considered by itself as one of a number of areas, however, it may be informal, but its type will none the less surely be decided by the limiting conditions of the problem.

After the circulation is settled, comes the location of the utilitarian and esthetic planting, and the question of position and extent. The utilitarian planting is placed where it will achieve its greatest economic usefulness, and the esthetic where it will give the greatest amount of pleasure;

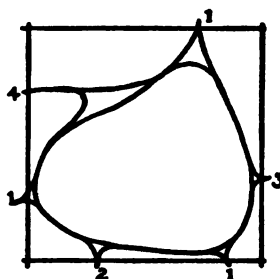
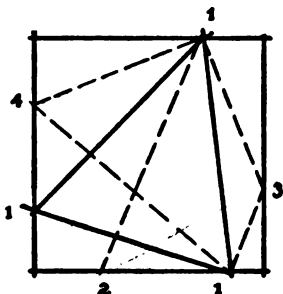
THE GEOMETRICAL BASIS OF THE PLAN IN LANDSCAPE DESIGN

A



INFORMAL

B



C

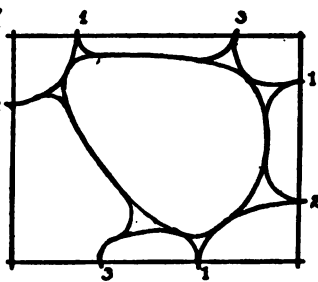
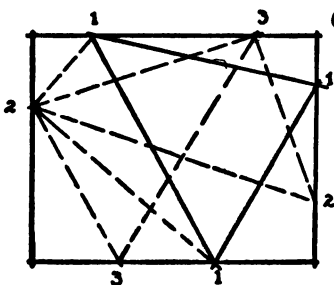


FIGURE 18. THE GEOMETRICAL BASIS OF THE PLAN IN INFORMAL DESIGN

but one must continually bear in mind the overlapping of these two ~~masses~~, and judge every solution from both points of view. Planting depends directly upon the circulation, because it directs the gaze of those who use the walks and drives in directions chosen by the designer, and screens service roads that might present objectionable features.

It will be seen that the composition of the planting masses is nothing more nor less than the thoughtful and satisfactory location of areas. Balance, rhythm, and repetition enter here as dominant factors in the design, when it is first considered in the abstract.

The axes in all design are very important, although so far as general appearances are concerned, they do not figure as prominently in the informal design as the formal.

An axis is a geometrical line—the major structural line of a design—about which, and in relation to which, all the parts are arranged. There are primary and secondary axes. The primary axis is the one of greatest importance, and the secondary axes, of which there are several, are arranged in harmonious relations with it. When an “existing axis” is spoken of, the meaning is

that all the elements of the subject under consideration are arranged in a manner as to make clearly evident the dominance of the axial line and its position.

Axes may exist on account of conditions or they may be created. In the most ordinary form of landscape design the axis of a view from a window or doorway is chosen as the major structural axis of the design, and this is emphasized by planting.

Existing axes—that is, axes that are at once apparent—may be divided into two classes, that which is perceived from the inside of the house, and that which is perceived from the outside. Focus along axial lines in the first case is brought about by the enframement of a window, a door, or a terrace; and some object of interest, usually called a “feature,” is generally placed on the axis to insure stability and emphasis. In looking from a window at an informal scheme, however naturalistic the planting may be, there is frequently either a sun-dial, or some other architectural or sculptural feature, set directly on the axis. It serves to attract the gaze, and unconsciously satisfies the mind in regard to the underlying structural lines. Where the axis is perceived from the outside, it is usually made to coincide with the axis of a view or

a vista of some sort which focuses upon a distant valley and mountain, a river or a village.

In designing the planting for a scheme, existing axes must always be taken into consideration, and where axes are to be created, not having existed before, they are the first things to be decided upon in determining the proportions of the design. Created axes are almost always found in formal planting, particularly in the formal garden, where their position is frequently emphasized by the parallel direction of walks or drives. Sometimes they will cross at right angles. Since the axis is considered the backbone of the design scheme, it would seem very strange to have a main drive, unless there were one on each side, run parallel with it rather than along it, for this would destroy, in the eye of the spectator, the idea of symmetry, always an essential in formal design.

The material used will probably be grouped according to the above study of axes, directing the eye toward some distant object of interest. Very often, however, a fountain, a statue, or a building is placed at the intersection of major and minor axes. In fact, anything the individual interest of which is sufficient to repay the attention may be used here as an accent.

In a much less symmetrical way in informal design plant material is used to enframe views which determine axes; for informal axes, as has recently been pointed out, are generally determined by views from within or without the house, as the case may be. Plant material is sometimes used on an axis where some one definite point is to be accentuated, but accent material is always employed for this purpose. In formal design the positions of the axes determine the positions of all walks and the placing of all garden accessories.

Every problem, when finished, should have positive qualities, a certain character of its own. There should be no doubt in the mind of the spectator as to what the desired effect is, and it should be perceived directly. It must not, of course, assault the intelligence of the beholder and clamor for attention, but should nevertheless tell its story and accomplish its purpose in a straightforward fashion.

Sir Joshua Reynolds had something to say in connection with painting that will apply with equal force to landscape:

The great end of the art is to strike the imagination. The painter therefore is to make no ostentation of the means by which this is done; the spectator is only to feel the result in

his bosom. An inferior artist is unwilling that any part of his industry should be lost upon the spectator. He takes as much pains to discover as the greater artist does to conceal the marks of his subordinate assiduity. In works of the lower kind, everything appears studied, and encumbered; it is all boastful art and open affectation. The ignorant often part from such pictures with wonder in their mouths, and indifference in their hearts.

In a way, every landscape problem that comes up is a law unto itself, and yet all successful landscape schemes have obeyed the general laws of design. The most essential things to bear in mind are, first, the fitness of the design for its function, the subordination of all details to the general idea, and finally a careful working out of these details in such a way as to enhance the first favorable impression which has been gained without close scrutiny.

Whatever the problem in hand, and whatever the medium employed, the primary requisite of good design is fitness for the function which it is to perform.

III

COLOR

ALL objects perceived by man, whether natural or artificial, are visible because of their color, and because of that alone. A thing is visible because it is darker or lighter than something beside or behind it or is of a different hue, and the shape of its color mass gives the idea of form. This form is often expressed by means of a line drawn with pencil, pen, or brush, though there is nothing in nature which really warrants the use of such a line, as everything is perceptible by masses, and these masses consist of varying amounts of different colors. The long-established conventions of drawing have enabled us to perceive the idea of objects when their outlines alone are represented, and this abstraction has given rise to what is termed "line-drawing," or drawing in outline. The imagination of the spectator, relying upon memory, fills in these outlines with the proper colors, and thus the drawing indicates reality. These outlines, however, are in themselves abstractions,

and like nothing else in nature. In drawing processes, then, it is the color shape that is indicated by the drawn lines.

One element of color, dark and light, is perhaps most important in the perception of objects, and this darkness and lightness is known as value.

At night one does not perceive objects readily because the absence of light has minimized value contrasts, making the objects appear uniform in color, and where color differences are not perceived, individuality is lost. On a moonlight night the principal perceptions are of "values,"—that is, lights and darks,—with other slightly differing color qualities added. The shadows are all a sort of deep violet black, and the "high-lights" a greenish yellow. Forms are consequently seen only in their larger relationships where they are relieved by shadow, but in the shadow itself all detail is lost, because there is insufficient light to make color distinctions.

Where the light conditions are such as to make colors easily perceptible, the color viewed abstractly is of more importance than the form, for it repels or attracts more readily than any other one element of design.

Color is divided into three parts, value, hue, and

intensity, and into these parts any color may be finally analyzed.* Value, as has been said, is the lightness or darkness of a color, without taking into consideration the hue or intensity.

The hue of a color is its individuality,—the quality which gives it a name, such as red, blue, or

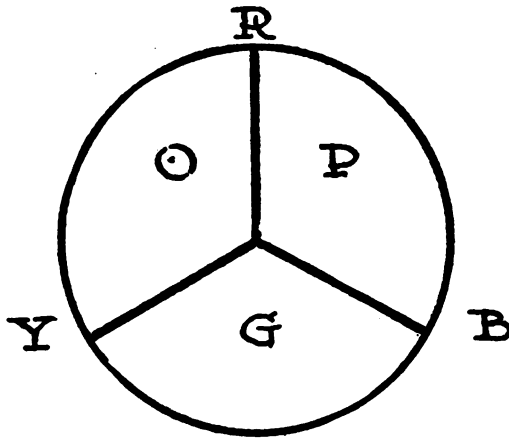


FIGURE 19. DIAGRAM OF COMPLEMENTARY
COLORS

green. Hue differentiates colors of the same value and intensity. Its gradations may be very slight; for instance, a number of colors may be chosen any one of which would unhesitatingly be pronounced "blue," and yet upon comparison it will be seen that no two are alike.

* Cf. "A Text-Book of Design," Kelley and Mowll, pp. 106 et seq.

Color names, unfortunately, are loosely applied, and the painters call hues by names which mean nothing to the dry-goods dealer who is evolving new colors (in name at least) every year to satisfy the demands of his fair patrons for something new. The horticulturists use a still different terminology, and, sad to relate, are rather careless about it, too. On account of the all-pervasive looseness in color characterization, it has seemed best to keep the color names in this book as simple and definite as possible.

Intensity is the brilliancy of a color, and its opposite may be called neutrality. Imagine two blossoms of the same hue, such as blue, for instance. They are of the same value; one is neither lighter nor darker than the other; one is a bright blue and the other is a dull blue, which is merely another way of saying that the intensities are different. The brighter flower has the greater intensity. A bright color in unfavorable surroundings is much more offensive than a dull one; consequently it is safer to use brilliant colors sparingly, relying on colors of less intensity for the greater part of the scheme. If a high intensity is characteristic of a planting scheme, it will be difficult to secure an accent color unless it is one of the highly special-

ized horticultural varieties, such as the Japanese maples and varicolored shrubs.

Among a number of brilliantly colored plants all clamoring for attention, an accent plant will have to be very powerful indeed in order to make its presence felt. Needless to say, a scheme of this sort is entirely out of place in everyday surroundings.

As a rule it is much more satisfactory to restrict the hues and intensities, using differing values for accent purposes, and leaving the color contrasts for unusual situations and effects.

Colors may be divided into two classes, the primary colors, red, yellow, and blue, from which all other colors are made, and the complementary colors, often called secondaries. Complementary colors are those which have nothing in common,—giving the greatest possible color contrasts. Every color has its complement in the color most unlike it.

The complement of any primary color is a secondary which is composed of equal visual amounts of the other two primaries. Conversely, every secondary color has as its complement the primary which does not enter into its composition. In the color cycle (Fig. 20) the complementary colors

appear directly opposite one another. Red and yellow, mixed, give orange; yellow and blue, green; blue and red, purple or violet.

If complementary pigment colors are mixed in equal quantities, each kills or neutralizes the other, and the result is gray, in which neither of the complements is traceable. In fact, complementary colors are so antagonistic that they will neutralize one another if used in anywhere near equal quantities. On the other hand, they may be used together to great advantage if a very small amount of one is present. In this case there is

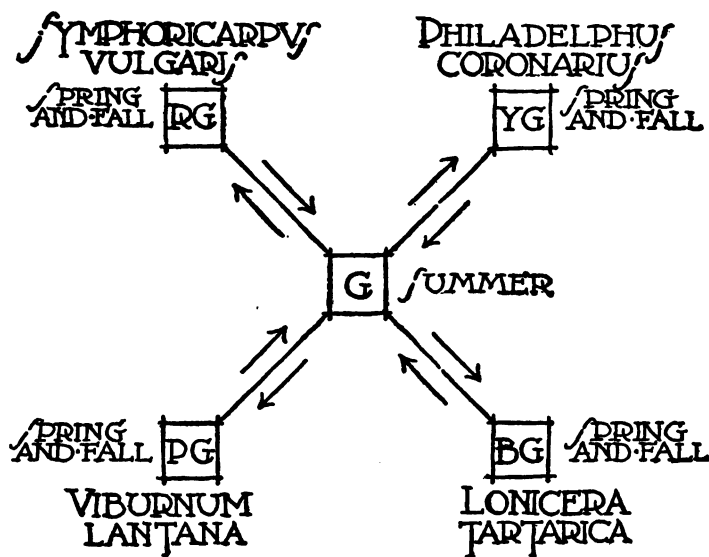


FIGURE 20. DIAGRAM OF SEASONAL COLOR CHANGES

no doubt as to which is the predominating color, and all its good qualities are set off to advantage by the presence of its complement, unlike it in every respect. Such arrangements are very stimulating.

This stimulus is frequently taken advantage of in winter planting, where a background of dark evergreens is relieved and brightened by the bare red branches of the dogwood (*Cornus siberius*) or berry-bearing shrubs, such as the barberry, with its bright red clusters. It is the contrast of complementaries, present in unequal quantities, that gives so festive an appearance to holly.

Color has certain well-established psychological phenomena: red is a powerful excitant; blue in large quantities, and especially violet, is depressing; while the greens and browns are quieting and restful, probably because we perceive so many of them in nature. This is, of course, a broad generalization, for it is quite possible to find a green that has a most disquieting influence and a red that is almost soothing; but in the main the statement holds. Of course these effects are produced by the elimination of other colors, and, as described, will not often be noticeably present, but if these phenomena are kept in mind, they will be

found very helpful in the production of color harmonies. The landscape-designer can take advantage of these facts in his planting, and lend a vivacious or sober aspect to his scheme when it is desirable.

Many people have a predilection for one hue or another. One may fancy red particularly, and another may prefer purple. There are often inherent color antipathies. When a person says, "I don't like blue," he means that that color, apart from its surroundings, is distasteful to him. But for design purposes a color cannot be considered apart from its surroundings.

It must be recognized that no color in itself is necessarily disagreeable, but only in combination with other colors, and in consequence the questions of color combinations and harmonizations are of the utmost importance. The colors employed must either have sufficient of the complementary to bring out salient features—individualities of hue—or must be sufficiently alike to present one simple idea.

Color appreciation is largely a matter of education, as is the enjoyment of music. Catchy songs and brilliant colors fall in the same class: both secure the attention with greatest ease, but do not

possess enough refinement to claim an educated taste for any length of time. All the elements of attractiveness are pushed at one, and nothing is left for later discovery and enjoyment.

It is a well-known fact that the taste of people who become interested in pictures changes rapidly as their familiarity with and knowledge of them increases. It is the same with plants. The uneducated taste requires the nerve-shattering accent of the round, red geranium bed in the middle of the front lawn; the more refined taste much prefers the simple expanse of green, with the color accents relegated to the border. Barbaric colors may be cheerful, but they certainly cannot be termed restful.

A painter of landscapes, one who designs them on canvas, has much greater freedom than does the landscape-designer, who depends for all his effects upon architectural and horticultural material.

If the painter desires to change a color slightly, he mixes another color with it to produce the effect he wishes. That resource is not open to the landscape-designer. He must search for another plant that has the required color characteristic in addition to other essential qualities, and there may be no such variety as he wishes. In that case he

must re-design his problem so as to use available material. He must know his materials so thoroughly that he runs no danger of imagining a charming color scheme only to find that there are no plants that will give the desired result, or that such plants as have the required color will not grow under the prescribed conditions. Necessarily, then, the horticultural materials are more restricted than the painter's palette, and one realizes that the gardens of Watteau never grew or could grow as he painted them except in his imagination.

Painters often use a desired color note in a shadow when it is best that it be not too prominent, but even this is usually denied to the landscape-designer. His leaves and blossoms generally require sunlight, and comparatively few species will grow in the shade. "A city that is set upon an hill cannot be hid." Just so will the color errors in the design be set forth in all their hideousness because of the bright light upon them.

The color problem of the landscape-designer is, then, the combining of his materials to the best advantage. His colors cannot be contrary to nature. They are made to his hand, unalterably fixed; he may choose or reject, but that is his only

latitude. Fortunately, there is an abundance of plant material which will grow in any temperate or tropical climate, so the natural limitations will not be any great drawback.

Since no color can rightfully be termed ugly when considered by itself alone, how may one combine colors to the best advantage? The laws of repetition will apply here exactly as they did to form.

Colors possessing a common element will harmonize. Yet here are also glorious possibilities for color clashes. If a costume contains three or four different kinds of red, it is sure to be ugly. Nothing could be worse than a bed of geraniums of several different reds all fighting for supremacy. To be sure, they possess a common element, but it is too much in evidence. If of two reds of much the same value and intensity, one has a leaning toward blue, and the other a weakness for yellow, confusion is bound to result if they are used together. It is much the same as close harmony in music: to many it seems discord. A very simple means of color analysis will prevent mistakes of this kind.

A color may usually be separated into two parts, its dominant note and its modifying note, the lat-

ter its suggestion of some other color. A yellow green may be divided into a large amount of green and a lesser amount of yellow.

Consider two groups of colors, one with the dominant note the same for all its members, but with the modifying notes different; the other with different dominants, but possessing the same modifier. As a rule the first group will clash while the second will harmonize. From this it may be deduced that where color plays a large part, the dominant notes should possess variety, with enough of the modifier present to harmonize them and pull them together. This refers of course only to colors of high intensity, for the duller tones are seldom inharmonious in combination. This is because they possess the common element of neutrality.

In the design chapter it was said that the final result of every design scheme should be a balance. The balance applies to color as well as to form. This does not necessarily imply that the same color note must be repeated on opposite sides of the design,—there is no chance for subtlety in such a treatment,—but it means that the color accents of whatever sort, though quite dissimilar, must form a balance.

Plant colors are seen in leaf, blossom, fruit, and twig or stem, and the predominance of any of these elements will determine the color value of the plant. To be sure, many plants are interesting in all these ways, but necessarily at different seasons of the year. Texture of the plant surfaces will have a considerable influence on the color value of a plant. The rhododendron leaf is attractive not only on account of its dark, warm green color, but also because of the glossy texture, which catches the light sharply, making brilliant high lights and shadows, and giving greater variety to the foliage color. The "dusty miller," because of its rough surface, and the common velvety mullein have a different color value on account of their texture, which catches the light so as to spread a "bloom" over the surface, and the result is that the natural colors, at a slight distance, are lessened in intensity and neutralized.

Plants vary in color value as their distance from the observer increases, and in planning the color of a planting scheme it is well to bear in mind the position and distance from which the plants are to be viewed. Distance always tends to decrease value contrasts and to add blue to hues. Plants that, close to the observer, might appear

too brilliant, serve well to emphasize a more distant point, and conversely flowers of delicate hue must be closely viewed in order to produce any effect. In the problem chapter (Fig. 42) will be seen a scheme of planting in which the dimensions appear to have been increased by the use of bluer foliage hues as the planting recedes from the spectator.

Green is, of course, the most common and satisfactory plant color, and it is of all gradations and varieties, from the silvery green of the poplar to the russet greens of the sedges, dark and light, intense and neutral. The other plant colors may be grouped under the primaries, red, yellow, and blue.

Under the reds will come pink, which is only a light red, scarlet, crimson, and magenta; under the yellows, greenish yellow, lemon yellow, and orange yellow, as well as all the browns, which are really deep shades of orange and yellow. The blues vary from green-blue at one extreme to purples and violets at the other. It will be a simple matter to group plant colorings approximately under these heads.

Each of the seasons has its own peculiar range of colors, and therefore it should be easy, in look-

ing at a picture, to determine by the season colors the time at which it was planted.

In the spring the greens of high value predominate, with a strong leaning toward the yellow greens; yellows; light blues; and white in the blossoms.

The summer is least interesting of all in color, for most of the greens have turned dark and dull, and there is little color accent; but wherever an accent occurs, it is probably stronger than spring color would be.

In the autumn there is an immense variety of yellows, oranges, reds, and browns, all of which contrast beautifully with an evergreen background.

There is not much range of color in the winter. The evergreens are the strongest note of all, and some of the oaks retain their leaves till spring, while the other trees have only their twig coloring, varying from gray to brown as a rule. There are brilliant exceptions to this in the bright red and yellow dogwoods, and in all the berry-bearing shrubs, which now appear to good advantage, silhouetting their clusters against the dark background.

A "year-round" garden should aim at a color

interest that will never be lost, although it will progress through leaf, blossom, fruit, and twig, from one phase to another as the seasons change.

The seasonal development of a shrub causes it to vary its color in a regular progression, moving its dominant color note through a sort of cycle of changes. Plants differing widely in spring foliage approach a standard green in late summer, to become again diversified in the autumn. This may be called "color rotation."

While plant color is largely green, this green will incline somewhat toward one of the primaries, so that, regardless of species, plants may be grouped under red, blue, yellow, and even purple greens. This modifying element of the plant green will appear most strongly at the beginning and the end of the plant's yearly growth, for during the summer season there is little variety in plant greens (Fig. 20). The Japanese barberry, for example, sends forth reddish buds, which gradually turn into the dark, dull green of high summer; then it begins another change toward the brilliant red of its autumn foliage. There has been a progression or rotation from red through green and back to red again. The *Viburnum lantana*, or wayfaring tree, has a rotation from pur-

ple back to purple, and the *Forsythia* runs the scale of yellow.

There is a fourth class still which does not come into the same category, its autumn coloring being the complementary of the spring; but this grouping by color rotation will be found to be of great assistance to the landscape-designer. Trees, herbaceous plants, and vines may be grouped in the same fashion; for example, the Colorado blue spruce, the Japanese ivy, and the willow.

The season at which the major color interest is most highly developed will determine the principal color usefulness of the plant.

Color planting is of two sorts; one to produce unity, and the other accent, though all accents should be unified by balance of attractiveness if not of similar color. The unity will be secured by the predominance of either value or hue. Intensity at its highest tends to differentiate colors, so when the opposite of intensity or neutrality appears, that is also a unifying element.

Unification is only a matter of selection. Shrubs may be chosen according to their values, light, medium, or dark; or because yellow, red, or blue appears as a modifying element in all. If both one value and one hue are given preference,

there will be too little variety (except in case of formal planting, where form is the principal consideration), and monotony will result.

The problem may be stated in another way: if values be similar, considerable color range is permissible; and if the colors be similar, the values need not be restricted. In this very point it may be seen that the impress of a designer's personality and sense of discrimination may be stamped upon a garden, for Nature does not discriminate, but plays all the trump-cards possible at every turn. Nature limits herself only by conditions of growth; the landscape-designer should be less eclectic. Unity in a design will impress the beholder with a sense of fitness and completeness.

Accent in color may be secured in two ways, either by emphasizing the predominating color by a strong intense note of the same hue or by contrasting a complementary hue with the major color note. Of the two methods the contrasting will give the stronger accent. A change of value will increase the emphasis in both cases. Where the contrasting method is employed, it is not always necessary to use the exact complementary, or greatest possible color contrast, for sufficient accent may be secured without going to such an

extreme. It is merely a question of nice adjustment, which will depend largely upon the good taste of the designer.

Since accents are not conducive to unity, in each planting scheme there should be a distinctly larger amount of unifying than accent planting. If this is done, the accents will brighten and tone up the whole, instead of seeming to struggle for superiority. This is where the layman most frequently errs; his planting is a system of color exclamations.

Accents should never appear in filler shrubs, since these are always a unifying element and should not be disturbed; the accent must appear either in the background or in the facer. Where trees to be seen from a distance require accent, it should always be given by a shrub facing. Even though the accent colors differ widely from the rest of the color scheme, it will be of advantage if the dominating color note appears in them to a slight extent. This will insure their perfect amalgamation.

If a planting scheme is on a large scale and divided into distinctly separate parts, it will often be well to allow the accent color in one scheme to predominate in another: it will be a sufficiently

different use of color to convey an entirely different impression, and yet it will not necessitate dragging in still other colors, and working out additional schemes of harmonization.

It will be seen, then, that every color scheme should have a predominance of quiet color. There are almost always excellent opportunities for accent, but these should be treated with considerable reticence. A color scheme should be restful rather than stimulating.

IV

PLANTING

A THOROUGH knowledge of plant materials and their possible uses in landscape work is of great importance to the landscape-designer, inasmuch as most of the effects he desires to create, in the working out of any problem where plants are employed, depend upon the intelligent use of these plant materials.

In a large way topography affects the design scheme, and this topography may be taken without change, as it occurs in the problem, or it may be altered to suit the requirements better. This alteration will depend upon the extent of the scheme at hand and the amount of money to be laid out upon it.

Planting is often used topographically to give effects of height and to emphasize or obscure elevations. In the diagram showing the section of hillside planting (Fig. 21) it will be seen that the scale of the plant materials has been very carefully arranged to take advantage of the topography.

Plant materials are used in various ways, according to the purpose in view; for the problem of the landscape-designer, aside from determining more or less the general characteristics of the architecture present, is to improve the landscape surroundings of the building, and to tie them and

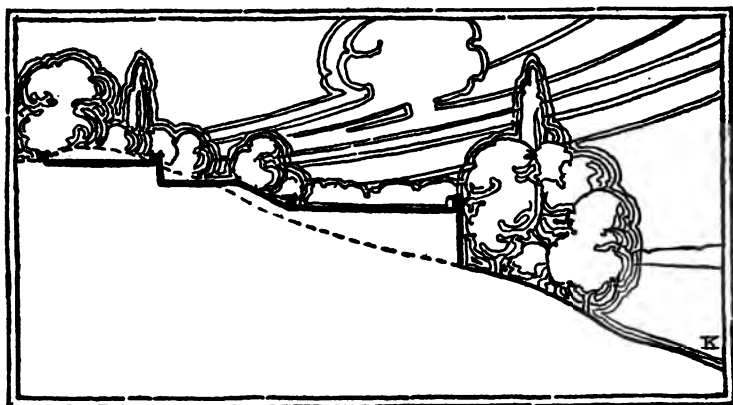


FIGURE 21. HILLSIDE PLANTING TO PRODUCE ILLUSIONS OF GRADE

the buildings in with the prevailing type of landscape, wherever his problem may occur. He will use his plant material, then, in many ways: for screening objectionable features, such as service walks and drives and outbuildings (Fig. 22); tying buildings in with their surroundings; calling attention to points of interest that might otherwise

have been overlooked, such as a distant view; for the elaborating and harmonizing of architectural detail, as in setting off a monumental building to the best advantage; and in supplying a setting for special features, as for instance, a background for a large scheme or a foreground beyond which the general scheme is to be seen.

As a landscape scheme depends for its chief interest upon the first impression received by the beholder, the importance of the point of view cannot be overemphasized; therefore, as the number of points of view in a problem increases, the complexity of the plant composition increases correspondingly.

The first favorable impression made by a landscape scheme as seen from a distance must be maintained at shorter range, and the massing of plants and shrubs must be accomplished so nicely as to stimulate interest for a nearer view and a closer analysis.

If an estate is beautiful, it need not present a blank wall or screen of plant material to the general public in order to be sufficiently secluded for privacy (Fig. 23); neither is it necessary that its owners, willingly or not, must live in the public eye. It should appear attractive from without,

but this attractiveness should be secondary to the more important interest of those who are gazing out from within.

In the planting of large parks or public properties the consideration of varying points of view is found to greater extent perhaps than in any other problems which the landscape-architect may undertake. These are often of small extent, occur generally at the intersection or radiation of streets, and are seen from a number of different points of approach. It is very essential that the park should appear in an equally favorable light from any one of these approaches, and its composition must therefore be much more carefully studied than an off-scape, which is to be seen from one position only.

Planting is often employed in architectural composition to carry out the lines of a design and to unify the general impression. It gives a greater breadth to this impression and emphasizes the salient features. It furnishes an easy transition from one building to another, and is a great help in harmonizing groups of buildings of different types.

A sense of fitness is so evidently lacking in num-



FIGURE 22. THE SORT OF THING THAT DEMANDS SCREENING

bers of architects who are called upon to design additions to educational and municipal institutions and groups that it is frequently necessary to employ a great deal of planting in order to make the results bearable. This is particularly true where different architects have been called upon to design buildings of the same group. In such cases there often appears an uncommendable desire to emphasize the particular building under consideration by making it of much more attractive appearance than the other members of the group, rather than a wish to unite diverse elements more closely and add to the collective beauty of the scheme.

Planting may also create new interests. In many cases where architectural elements are markedly dominant it is impossible to introduce sufficient accent architecturally without either the introduction of a different style or an unwarranted distraction of attention. Many times the needed interest may be supplied by planting without marring the architectural effect. In such cases the lines of the large planting masses are arranged to harmonize with the architectural lines, and accent is obtained by the mass characteristics of the

plants. If the problem were of horticultural emphasis, the accent would probably be achieved by varying shapes, sizes, or colors (Fig. 24).

Planting is divided into two classes, according to its use, whether for beauty alone or for more practical purposes. These classes are called the esthetic and the economic.

In the economic class, plant material is employed for strictly utilitarian purposes, beauty being a secondary consideration. It subdivides large schemes, taking the place of more artificial barriers, and screens objectionable features, so that utilitarian buildings, service courts, and other features which are not essentially attractive may be present where they are most needed without marring the general beauty of the scenery. Economic planting is accordingly unobtrusive, and cannot afford to attract direct attention to itself, as in so doing it would disclose the presence of the object which was to have been screened.

Where plants are used in an esthetic way they fall into three classes of treatment: first, they may be employed to aid in an architectural scheme, being interesting chiefly on account of their form, as in the carrying out or emphasizing of architectural lines; secondly, for the interest of the plant itself,

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FIGURE 23. PRIVATE GROUNDS WHICH ARE NOT TOO SECLUDED IN APPEARANCE

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as is generally the case with exotic material; thirdly, to enframe a view and direct the gaze toward distant prospects or pleasant features, thereby giving emphasis and accent to an otherwise monotonous scheme.

On account of the widely different usage, the characters of economic and esthetic planting must be quite dissimilar. Economic planting, as has been stated, should be so very unobtrusive as even to escape notice, if possible. Consequently plants used in such a scheme will be indigenous to the locality, very quiet in color, and not at all striking in outline. The most successful economic planting is that which fulfils its function and at the same time attracts the least attention.

Esthetic planting, on the other hand, allows greater latitude, and really demands the use of much more interesting material, as the attention is supposed to rest largely upon the plant material and its arrangement as an end in itself. As it has a wider variety of purpose, this will give a correspondingly greater range of selection, and will include the exotic and subtropic plants.

For esthetic considerations the planting is to tell first as dark masses against lighter areas, and this may be termed "contrast of value." This

lighter or darker background may be a set of buildings, any architectural work, such as walls, gates, or terraces, or a wide sweep of lawn and meadows in less highly formalized work. The sizes and locations of these masses are determined by the problem in hand, and a successful solution will depend simply upon a nice discernment of their esthetic and economic significance.

In a large number of cases planting is valuable chiefly on account of its silhouette in elevation. This is generally the case in the informal style. In the formal gardens, where parts are filled with brilliant bedding plants, and where the whole scheme is seen at a glance, the plan will be of major importance; the accents alone will appear to any extent in profile, and they are often architectural. The plan will also be of utmost importance if the planting is to be looked down upon from a height, as often happened in the old Italian gardens of the Renaissance, which were almost invariably located on hillsides. It can be said, however, that almost all of these problems where the plan has greater significance will fall within the formal style of planting.

In the informal style the elevation is of greatest importance, and the plan is considered mainly as

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FIGURE 24. HORTICULTURAL ACCENTS

affecting the elevation. Of course the plan and the elevation are interdependent, and it will be impossible to develop one satisfactorily without the other. Greater attention may be paid to either as occasion demands.

Planting problems, as regards surroundings, fall into three large groups, which in turn are subdivided. They are city, suburban, and country problems. At one extreme is complete architectural domination, and at the other the emphasis of natural surroundings.*

In the transition from one type to the other one influence is constantly diminishing as the other grows. In some suburban problems the extremes appear to be rather evenly balanced. Under the city type will come the typical city home, almost exclusively architectural; then the city park, which may be a sort of playground for the children, or a square, either for traffic purposes, or for the display of a monument or a feature to emphasize an axis. This last use is probably seen to a greater extent in Washington, D. C., than in any other city in America. Boulevards and parkways are perhaps the most important field of the landscape-designer in city planting.

Under suburban planting problems will come

* See Charles Elliott, "Landscape Architect," pp. 266-271.

two classes of homes: the large suburban estate, where expense of layout and upkeep is of no moment; and the small home, such as brings joy to the heart of the commuter. There will also be the large naturalistic and countrylike park, the property of the great city. This park will have varying planting schemes, with much natural planting; golf-links, formal gardens, rocky hills, meadows, curving roads, and the utilization of water as a decorative feature, with its many possibilities in the way of bridges, fountains, and cascades. Parkways of a rather informal nature will be considered here, and also the planting of residential streets as units.

The country class of design has fewer ramifications, dealing with only two classes of buildings: the large estate for pleasure purposes; and the farm, which is mainly utilitarian. In a country estate the trees and shrubs must harmonize with the surrounding landscape, and this controls in a large measure the selection of the plants used. Plants without pronounced single characteristics are used in large masses, while the more specimen-like shrubs are reserved for the smaller areas. Where trees appear in formal gardens they are considered as architectural features. This refers,



FIGURE 25. A COLONIAL GARDEN

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of course, to the walled-in gardens, which are exceptions to mass planting. But in the gardens of Italy, where the total area is often as large as a country estate, trees are frequently used as if they were shrubs, on account of the enormous scale of the garden, regardless of the surrounding landscape.

Plants are grouped as annuals, those that die every year; biennials, those that generally flower the second year and then die out; and perennials, lasting many years; greenhouse plants, which must be grown under glass; bedding plants, which are started in the greenhouse; trees and shrubs which are classified as hardy woody plants.

Planting material should always be chosen with the idea in mind of fitness for the function which it is to perform, and the location in which it is to appear. This has much to do with soil and climate, which determine the scope of available material. The satisfactory relation of plant design to its location may be loosely termed "style in planting." The material should be selected carefully, so that it will seem to harmonize with its setting, whether this is architectural or naturalistic.

For instance, in a colonial garden such as occurs at Mount Vernon, or in the modern estates built

on colonial lines, one would expect to find box hedges, the rose of Sharon, or *hibiscus*, rose arches, perennial phlox, peonies, and hollyhocks (Fig. 25). For decades, all these plants have been so closely associated with colonial gardens that their very presence suggests the proximity of colonial architecture, and they serve admirably to carry out the spirit of the scheme.

In a French garden one always finds bedding plants of gaudy colors, standard roses, bays, and clipped trees.

A Florentine garden does not seem complete without the ever-present cypress tree, box hedges, laurels, crape myrtle, magnolia, and flowering plants in pots. In each of these cases the plant material employed is distinctly different, and yet distinctly characteristic of the class of problem in which it appears.

Balance and unity in planting are virtually inseparable. The scheme must appear to hang together, and not be a number of loosely related parts. This compactness and relation of the divisions of the planting scheme may be called unity, and is achieved through balance.

Balance may be secured through color and by shape. It is not necessary that the colors and

shapes found on one side of a planting scheme should appear exactly reversed upon the other or opposite side, but only that the colors and shapes of certain interest in a scheme should be balanced by other colors and shapes of equal interest; in fact, symmetrical balance is very seldom found in informal planting. This may mean the employment of different plant material to produce a required effect.

Unity is achieved by keeping all the plants in scale—that is, more or less of the same size—and allowing one color and one quality to predominate.

Accent is really an unexpected arrangement, something growing where it might not have been expected, or in such a way as to increase the interest, giving an added sense of pleasure. Great care must be exercised not to introduce it so frequently as to destroy the large and simple relations of the planting scheme. Where every member of the scheme is clamoring for attention, the result is a pandemonium in which no accent will appear.

Accent is sometimes achieved by unusual grouping of shrubs, by single shrubs placed in advantageous positions, and by the introduction of exotic varieties. It may also occur in the use of varying shape, color, and size, though the varia-

tion should be no greater than is necessary to produce the desired accent. If too great contrasts appear, the accent planting will not seem in keeping with its surroundings, and there will be loss of unity.

Accent is sometimes used to hold the eye within the narrow limits of a small planting scheme, and sometimes to carry it without the boundaries and fix attention upon distant prospects. An example of the first class, where unusual groupings, positions, and unique materials are used, is the Japanese garden (Fig. 11). Probably no two elements in the garden are of exactly the same shape or size; they may not even be of the same color. Each is to a certain extent an accent in itself and possesses a great deal of interest; but all these dissimilar interests are very carefully and subtly balanced, and all occur within such small confines that the eye is held by the interest of the individual plant shapes, colors, and grouping, and by the charm of the accessories, such as stone lanterns, bridges, and tea-houses, so that, indeed, there can be no thought of looking outside the garden.

Italian gardens, on the other hand, from their very position on rocky hillsides, demanded that the distant views form a large part of their charm, and



Photograph by Anderson

FIGURE 26. VILLA ALDOBRANDINI, FRASCATI, ITALY
An architectural enframement to emphasize an exterior axis

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Figure 1

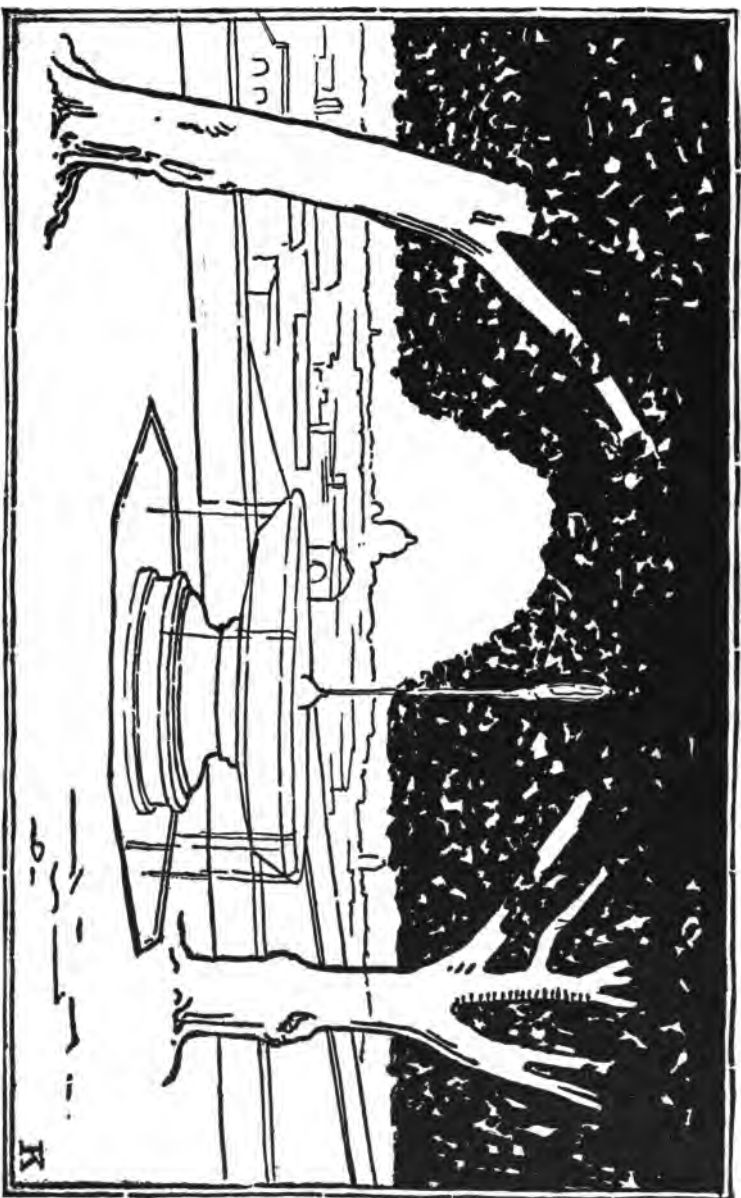


FIGURE 27. ENFRAMMENT OF VISTA FROM VILLA MEDICI, ROME

in consequence accent plants and architectural accessories (Figs. 26, 54) as well are constantly placed in such a manner as to direct the gaze of the visitor to the off-scape in various directions. Wherever a particularly beautiful view occurs it is almost certain to be set off or enframed by some planting features (Fig. 27).

Under the two large heads of the formal and the informal styles will be found different types which must be considered.

Informal planting consists of irregular forms irregularly placed. Free-growing shrubs are used at unequal distances, and the spacing is determined by the spread of the shrub and its age.

Often, when planting for immediate effect, shrubs are set close together, with the intention of thinning them when they have attained a larger growth; but in some cases they are spaced widely so as to allow for subsequent growth without alteration of position. The shrubs are planted so as to express the outline of the bed in which they are placed when they shall have attained their growth.

Informal planting allows a much wider range of shape, scale, and color in the same planting scheme than does the formal. Informal planting may be seen close at hand or at a distance. If it



FIGURE 28. WOODLAND PLANTING
Natural growth on the Massachusetts coast



is always to be seen at a distance, as in large parks, far from the driveways, detail is of no consequence, and any subtle plant characteristic will be lost. Therefore, in distant planting, it is necessary to seek for bold effect. If informal planting is used in a foreground planting scheme, as a bordering for driveways, the individual interest of the plants may be emphasized, and a great deal of attention given to detail.

Formal planting consists always of regular forms regularly placed, but in a majority of cases, though this is not usually understood, the regularity is obtained by selection rather than by clipping. A certain amount of regularity must be the characteristic of a formal scheme. Straight lines and angles are emphasized on account of their greater precision, while the informal type lays larger emphasis upon curves and rounded masses.

In the formal type little is left to the imagination. Few unexpected arrangements appear. The whole scheme is visible from one point, instead of unfolding gradually to the view. This emphasis of lines and angles may be attained by the position of plants, spacing so as to define the outline sharply by the selection of plants of naturally regular shape, and still further by keeping

the plants restrained by clipping or tying. Formal planting is always used in connection with architecture where the architectural effect is to predominate, and the prevailing character of the lines appearing in the architecture must be repeated in the plant masses. Accent can here be obtained merely by change of outline.

Falling more or less under the head of informal planting are several groups known to the landscape profession as woodland and wild planting, gardenesque, naturalistic, park-like, and seasonal planting.

In woodland planting (Fig. 28) the trees occur close together, and are irregularly disposed, with the native varieties predominating. Undergrowth may be used, or the ground may be kept clear. The trees are set at intervals, wide enough to permit the plantation to be seen into easily and have a more or less open appearance. Such planting is useful only on a large scale.

In wild planting (Fig. 29) trees, shrubs, and vines are allowed to grow at will, without any training, and wherever they may choose to stray. This type of planting is seen oftener as a result of accident than premeditation, though there are rare instances where it is quite desirable. Wild plant-



FIGURE 29. A PICTORIAL COMPOSITION IN WILD PLANTING

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Mr. Roll

ing will of course consist entirely of native material, and will vary with the character of the soil.

In gardenesque planting (Fig. 30) the emphasis is laid upon the horticultural element, and the plants are selected for their individual value. This may be due to the leaf, color, or perfume of the flower, as well as to the general shape and texture of the plant. The plants may be grouped, and count as a mass from a distance; but upon closer inspection the individual plants should appear, otherwise their varying attractions will be lost. The position of plants in gardenesque planting is due to their character rather than to their height, so that scale would not necessarily be a determining factor in placing plants according to gardenesque treatment. Japanese planting as well as topiary work may be included in the gardenesque type. The English border, where shrubs are "faced down" with perennials, is a type of gardenesque planting, for the charm depends here upon the individual plant, the rather delicate beauty of the perennial being strongly silhouetted against the darker shrub mass.

Naturalistic planting is generally to be seen from a distance, and is composed of trees and native shrubs. The mass is unrestrained in growth

and color contrast. The position of the shrubs will be due to their height, and they will be "faced down." "Facing down" is the planting of small varieties close to the edge of larger ones in order to make them appear as a bank, and tie them down closely to the ground. As a rule, naturalistic planting is intended to be seen from a distance, and its boundaries are not often precise, but are allowed to merge gradually one into the other.

Park-like planting (Fig. 31) tells first for mass and secondly for individual values. Trees are grouped in large masses, and small clumps occur near the edge of these masses, often with single trees of unusual size and beauty at some distance from the mass planting, so that an impression is created of large masses gradually becoming subdivided in such a way as to emphasize the individuality of single plants. This planting is not faced down. It occurs frequently in England.

In seasonal planting any type may prevail, since the selection of plants is determined by the season at which they reach their greatest attractiveness, and this type of planting is such as will be used in an estate which is open at only one season. Consequently it is not necessary that the garden or the surroundings should appear to advantage at any



FIGURE 30. GARDENESQUE PLANTING

other time of the year, and this permits a more highly specialized type of planting. Seasonal selection may apply in greater or less degree to any of the planting types.

It is essential that the landscape-designer should arrange all his data in such a way as to be able to find the plants he wants for any special reason in the shortest possible time. He may have designed a garden for a specific purpose, season, and color, quite without reference to plant material, and now it is necessary for him to find the plants which will produce the effect he desires. The easiest way to do this is by the card-index, but it is very difficult to work out a card-index scheme that will contain in simple and accessible form all the characteristics of plant materials. Plants are grouped, regardless of their botanical classification, according to certain marked features which lend special emphasis or attraction. Under these headings are height, form, quality, characteristics, season, value, texture, color, and soil.

Shrubs are divided into three classes according to their height: *a*, low; *b*, medium, and *c*, high. Height is a primary consideration in all planting schemes, as it determines the scale of the entire planting problem.

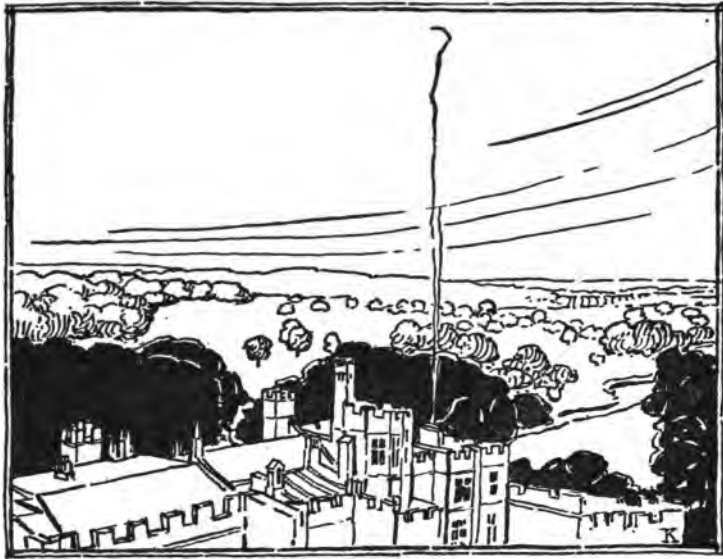


FIGURE 31. PARK-LIKE PLANTING AT WARWICK, ENGLAND

The scale which is to prevail in the planting scheme should in turn be fixed by the requirements of the problem in hand. If a screen were to be planted to hide a garage from the eyes of passers-by, a hedge of California privet would be of little value, as it would not perform the purpose for which it was placed there. It would be necessary to use higher shrubs or even Lombardy poplars, placed close together, if it were really necessary to conceal the building.

The scale of the planting may be determined on

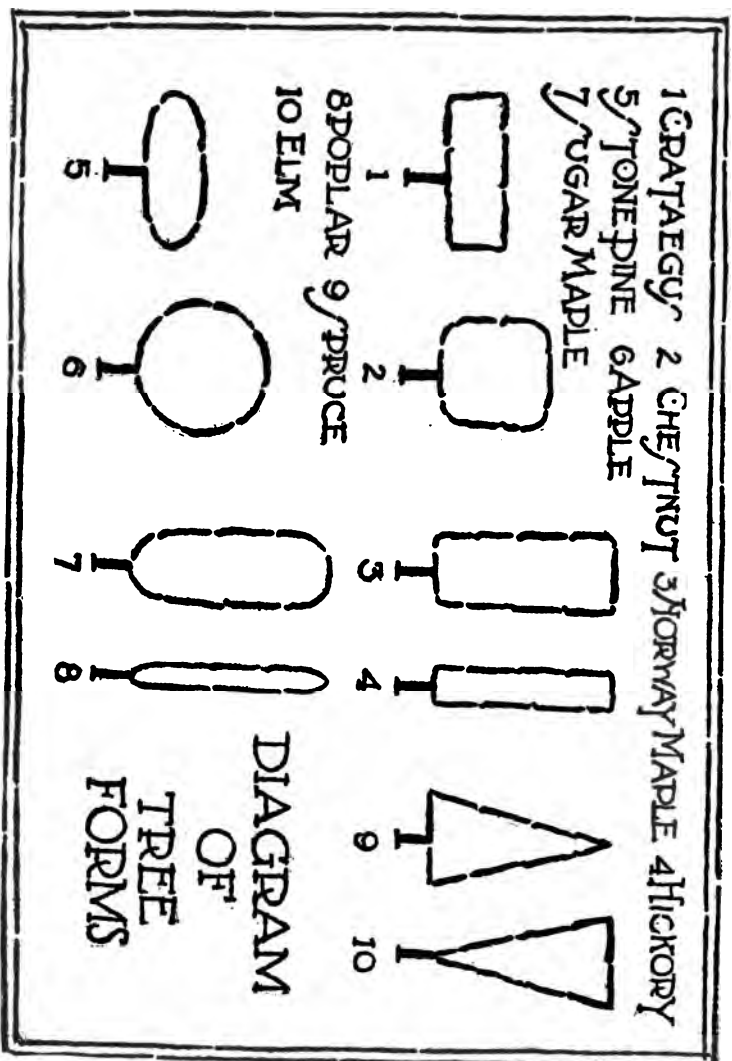


FIGURE 32. TREE FORMS

one hand by the economic aspects of the problem, and on the other by the esthetic. The height is decided upon first because of utilitarian features, and then for harmonization with existing conditions; also to furnish the amount of emphasis or accent required. High shrubs are called background; medium, filler; and low shrubs, facing. In large scale planting the trees may be used as background shrubs. In small scale planting herbaceous plants are often used as facers.

Plant forms may be roughly divided into rectangular, curvilinear, and triangular divisions (Fig. 32), according to the natural shapes of the trees and shrubs. While the groups may embrace numbers of widely different species, some of the commonest varieties are named in the diagram in order to make it easily understood. A more complex scheme of classification may seem necessary to some, but the one that is shown has proved very satisfactory for general use.

The rectangular and curvilinear classes have four subdivisions; the triangular has two. The extremes in each class are used as accent, for the less exaggerated forms are of greatest usefulness, being employed to do the heavy work in most planting plans. These are the filler plants. The



FIGURE 33. ROSE OF SHARON
Hibiscus



FIGURE 35. SNOWBERRY
Symphoricarpus racemosus



FIGURE 34. THE GOLDEN ELDER—CUT LEAF VARIETY
Sambucus canadensis aurea

groups may also be divided according to the deciduous and the evergreen members; these are further subdivided into regular and irregular classes.

Shrubs are often selected for their quality, by which is meant the degree of refinement of their appearance. According to their quality they are divided into three classes: the high class, or named varieties; the medium; and the coarse. An example of a high-class shrub would be the rhododendron. Bush-honeysuckle or mock-orange is a medium class, and the *Hydrangea paniculata grandiflora* is an example of the coarse species.

The quality of a shrub will often suggest its use. A marble building, such as a museum, a memorial, or a library demands the use of first-quality shrubs. They are decidedly fitting for use amid monumental surroundings. The second-quality shrubs can be used to advantage in most planting schemes, while the coarser varieties will not appear out of place in the meanest surroundings. Where coarse varieties predominate, shrubs of medium quality may be used for accent; and where medium-class shrubs predominate, the high-class shrubs may be used as accent.

For any planting scheme which has high-class

varieties it is not best to use other varieties of shrubs. The designer will ordinarily use shrubs of the same class, depending for accent upon difference in shape and color.

Characteristics are the distinguishing features of a plant, that part of its form or development which recommends it particularly to the landscape-designer. Its major interest may be in leaf, blossom, or twig. The leaf may demand attention on account of its scale, for it may be large, as in the catalpa; medium, as in the lilac; or small, as in the spiræa. Or it may attract because of its shape or its regularity, as with the maples and the ginkgo or the rose of Sharon; or on account of irregular development, as in the mulberry-tree. Then, too, the distinguishing characteristic may be its value, or the amount of light or dark in the green.

Value is divided into three parts: as light, medium, and dark, and these values appear in both deciduous and evergreen plants. The leaves may appear in clusters, rows, or whorls, and demand attention on account of their arrangement; or the entire outline of the leaf masses and their positions on the tree may seem to be of greatest importance. The direction of the leaf, which will

be horizontal, vertical, or oblique, will also affect the problem.

Leaves may be grouped in masses, as in the horse-chestnut, or may be scattered, as in the American elm. This will affect the texture of the entire tree or shrub; but the texture of the leaf itself is likewise of importance, as it affects the appearance of the entire leaf mass both near at hand and at a distance. It may be thick or thin, rough or smooth. Leaf texture may easily be understood by comparing the leaf of the California rubber-tree, thick, smooth, and regular, with the small, thin, and serrated leaves of the white birch. The leaves may be many or few in number, and this too will affect the appearance.

The first characteristic of the blossom is size, which means its general appearance as a single flower or a cluster, and may be large, as in the magnolia; medium, as in the *Philadelphus*; or small as in the spiræa. Blossom color will be discussed under the head of color, and it is of the utmost importance.

In arrangement, the blossoms may be individual, as in the rose of Sharon (Fig. 33), or massed, as in the elder (Fig. 34), and this will affect the problem to a considerable extent. For

use in gardens or near houses the odor must be taken into consideration, whether it be agreeable or unpleasant. Though the ailantus-tree is very decorative, care should be taken not to select the staminate form for use near the house, on account of the very disagreeable odor of the male buds.

The most interesting feature of a tree may lie in its twigs, because of their color or direction. This is vertical in the poplars, angular in the elm, horizontal in the *Crataegus* or the tupelo, and drooping in the weeping-willow and other trees of the type. Twigs may be slender, as in the acacia, or coarse, as in the Kentucky coffee-tree. The shape of the twig may attract. In the maple it is round, in the blue ash (*Fraxinus quadrangulata*) square, and in the *Euonymus alatus* triangular. The length of the twigs between branching is often marked, as in the ailantus or the elm.

Fruit characteristics have two phases, the economic and the esthetic. Each is affected by season, size, and color. The apple, cherry, pear, and plum are examples of economic fruit. The burning bush and the snowberry (Fig. 35) illustrate the decorative type. We may also have a combination of the practical and the esthetic, as in the common barberry and high-bush cranberry. The

fruit is very decorative, and may also be used for the making of jellies and jam.

It is thus seen that the characteristic of a shrub is really one of the most important determining factors in its choice or rejection by the landscape-designer. The season in which the plant characteristic develops is always of importance, for by a critical selection a garden may be given year-round attractiveness by employing plants the characteristics of which develop at different seasons. The choice of plant materials will then give a constant interest, but an ever-changing one. It is therefore most essential, in choosing a planting scheme, to bear in mind whether the garden is to be used at one time in the year only, and to plant accordingly.

A very important consideration in the selection of plants is their value, which means lightness or darkness in the general impression, and is dependent upon the foliage. The full discussion of value may be found in the chapter on color.

For landscape purposes all three values, light, medium, and dark, may be used together with advantage, though it is not advisable to use extremes together. The light and the medium, or the dark and the medium, may be employed satisfactorily

side by side, but the light and the dark, without intermediary, will produce too strong a contrast. In every planting scheme one value should be allowed to predominate.

The texture of a plant depends first upon the size of the leaves, then upon their number and arrangement upon the tree. The size of the leaves comes under three heads, fine, medium, and coarse. The spiræa and the Japanese barberry are examples of the first variety, the *Philadelphus* and the lilac of the second, the *Magnolia tripetela* and the castor-bean of the third.

A plant is chosen for color on account of the hue it retains longest. This is known as its color characteristic. Plant colors usually change during the season. Consequently, the hue which is most generally present is known as the plant's distinguishing color. In the Siberian dogwood this would be red, because the bark retains its brilliant red throughout the year despite the greener summer foliage. An exception to color change is the *Kerria Japonica*, which is bright green in leaf and twig, and consequently retains the same hue throughout the year.

The soil in which a plant will attain its best development is often a determining characteristic.

It is very essential that all plants be grouped according to their soil requirements, for a delicate plant, no matter how necessary its color or form may seem to be for a certain problem, cannot be used if the soil is poor, and another selection from hardier material must be made.

As has been intimated, the architectural or horticultural emphasis must constantly be kept in mind in designing the development of any planting scheme. In the architectural style the interest depends upon mass (Fig. 36) in form, value, and color; while in the horticultural type the interest lies with the individual plant and its form, value, and color. The Faulkner Farm garden here shown is interesting for its forms and masses rather than for any flower color. For this reason it shows up well in black and white.

In undertaking a planting problem, the desired effect must first be carefully determined, and then the material selected that will produce the effect required. The landscape-designer wishes certain forms, sizes, and colors, and considers these essential to the best development of his problem. He may be able to achieve these results in many different ways by the use of a variety of plant materials, and consequently will have a considerable range of

selection. The success of the result will depend upon the care exercised in the choice of the material, after taking into consideration the economic and esthetic requirements of the design.

The plan should always be read from the elevation. One often sees in parks and semi-public grounds that have not been skilfully laid out enormous beds of shrubs placed in such positions that only a very few are visible from any point of view, and consequently three-fourths of the material employed has been wasted, and is never seen at all. A wide bed containing shrubs of equal height may be seen to advantage from an elevation, or, if placed on a hillside, will look well when regarded from a plain, because it is possible to see the extent and shape of the planting mass as well as the shapes of the plants which compose it; but unless such a planting scheme is placed in a position where it can easily be observed from an elevation, it is clumsy and useless.

In all planting schemes, whether city, suburban, or country, and no matter what the type of planting employed, it is well to have a predominance of indigenous plants, or at least plants of the same general genus, possessing similar shapes, belonging to like species, and having the same general



FIGURE 36. PAULKNER FARM
Architectural planting with plant masses for principal interest

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conditions of acclimatization. This predominating impression may be secured through the filler shrubs.

It is interesting to note that the contours of native trees generally harmonize with the topography of the locality in which they are found, the long axis of the foliage being parallel with the prevailing lines of the landscape. Thus the wide-spreading sycamore is found growing naturally on the plains, but the vertical, jagged cypress is thoroughly characteristic of the rocky hillsides of Italy. If either of these trees were to be found in the habitat of the other, it would serve as a most striking accent. The same tree may often be used in different ways in one planting scheme. For example, the highly individual shape of the Lombardy poplar compels attention when the tree is used singly or in groups of two or three; but it also may be planted so close together for use as a screen that the individual tree forms are merged, and all indication of accent is lost. The use of poplar-trees as accents is very noticeable upon the plains of France.

The harmonization of plant forms with geological structure is even carried to extremes by nature under unusual conditions. In the volcanic

Japanese landscape shown in Figure 38 the contortions of the rock surfaces are repeated in the grotesque forms of the trees.

If one were to believe all that the untrained enthusiasts say about natural conditions and native planting, some very strange designs would result. One is told that plants should be only of the native and local varieties, and that they should not be corrected or trained, for "is not Nature the greatest artist of all?" Every one is familiar with planting schemes of this type, for they may be seen in any village where places have been allowed to go to ruin. They certainly look well in pictures, but are impossible to live with; straggling lilacs, unkempt trees, matted grasses, and a profusion of weeds, accenting the "native element," are seen on all sides, and are truly the logical outcome of just what the "back-to-nature" men are clamoring for.

The entire question of selection of plant material is one of suiting the means to the end. Without judicious selection, any planting scheme will fail miserably.

V

PROBLEMS

LANDSCAPE problems fall naturally into groups or classes, and the landscape-designer is bound to come into contact with a greater or less number of these groups. Within the groups themselves there is sufficient similarity to render decidedly worth while a thorough knowledge of general, though definite, methods of approach; for familiarity with a type problem, and success in its solution, will be of great assistance in attacking other problems of the same class. Several problems from different landscape groups are accordingly presented here, with the idea that their solutions may be helpful in the solving of problems of a similar nature.

COÖPERATIVE LANDSCAPE-GARDENING

One of the great needs in America to-day is the improvement of cities by a better arrangement of available space for the bringing in of more country-like conditions. The crying need seems to be

either a better use of the unencumbered space about the home and along the street or a more intensive landscape development. The city-dweller should strive to attain more the healthfulness and charm of the country than the average home-seeker can possibly secure in the average city at the present date, and he has a right to much more healthful and congenial surroundings (Fig. 38).

One of the solutions of the problem of civic betterment has been the building of garden cities. These cities are generally laid out and owned by a corporation, and all its inhabitants accept the houses and grounds just as they have been designed by the corporation architects. The result is of course a much more harmonious scheme than could have been attained in any other way. There are many successful communities of this sort in England. The scheme has made better headway in Europe than in America, however, for the objection of the average American to the garden city is that it is too paternalistic and proprietary. What the American people demand in any coöperative scheme for the improving of the surroundings of their homes is, first, that their own individual ideas regarding the main features of the proposed scheme be given careful consideration.

Individual control of all land from the curb-line to the back of the lot-line has become with us at present a recognized right.

The usual solution of the problem of the arrangement of the landscape with regard to the average city street is for the municipality to control the paving of the streets so far as to regulate the width and sometimes the type of materials used, though in many cases even this is left to the property-owners. Often the question of tree-planting, the width of sidewalk, and the prescription of the kind of material to be used in the construction has been controlled by the city. Other than this, the problem has been left to each individual lot-owner; but the result of such a type of design has been the loss of virtually all the individuality and interest that one should find in the development of the landscape along our streets. In its place appear mediocrity and monotony; long rows of houses rigidly adhering to a set building line (Fig. 39), lawns entirely bare of shrubs, and the street trees, if there are any, selected without regard to their fitness for the needs that they are supposed to satisfy.

The possibility of an extension of intelligent municipal control so as to include all land from

building-line to building-line has been shown favorably in the development of garden cities, and it is this idea that will solve the problem of a more intensive use of the land about our homes. Such extension will not mean replanning, but planning, since, as a rule, no plans had been made in the first place but the surroundings had merely grown unkempt, ugly, monotonous, and entirely lacking in any idea of unity (Figs. 22, 40).

By the carrying out of a simplified treatment for the more public portions of the home grounds, the individuality that we should expect to find at the present time will not be lost, but will actually be acquired, because any scheme, to be successful, must represent the united thought of the people interested for a definitely planned result, and not the possible injustice of some experiment by one person for philanthropic or altruistic purposes: it should express a sort of collective individuality.

The idea of community coöperation has indeed been used successfully as a basis for the solution of problems for street improvement in several American cities. In the working out of these problems the aim has been to secure the greatest amount of individuality for every separate home, and at the same time provide for an appearance of

continuity in the street as a whole. Each part of the landscape work has been studied not only with the idea that each separate house should have an individual interest and furnish a setting for the buildings adjacent to it, but also that there should be provided a continuous and uninterrupted scheme, tying the whole composition together, accentuating its principal features, enhancing the salient characteristics of the individual buildings, and adding color to the street view, at the same time maintaining the scale of the whole.

In the organizing of this work a general meeting of the residents of the street in question is held, the plans for the redesigning and beautification of the street are outlined as a whole, and an effort is made to get at individual preferences in regard to the replanning of each place. A "street-improvement committee" is then elected, and the general working out of the scheme is placed in their hands, with the understanding that each individual property owner will be consulted with regard to the improvement of his home grounds as a unit. The final plans are not of course the work of this committee, but are designed by an expert landscape-gardener who works in consultation with the committee.

A landscape survey is next taken to show the general conditions of the trees and shrub plantations and the arrangement of the walks and drives, with notes as to the advisability of changing any of these features for the increasing of their efficiency. This survey is made by notes and sketches, from which the survey plans are worked out in the drafting-room. These plans show the location and size of the houses, width of the street, the positions of all buildings, the walks, arrangement of walks, and position, area, and variety of shrubs used in any existing plantations. The plans are usually drawn at a scale of forty feet to the inch, each sheet showing one block of the street, and the information thus presented is adequate for completing the work.

In the working out of the design the first question to be studied is that of circulation. The main walks and their relations to the service walk should be carefully considered not only in relation to each individual property, but as regards the street as a whole. The question of the street trees comes next in respect to their general location. Care must be taken to locate them in such a way as to satisfy the individual needs of each separate property, to provide shelter from the sun as well

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FIGURE 37. REPETITION OF GEOLOGICAL CHARACTERISTICS IN TREE FORMS
Volcanic area in Japan

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as screening, and to emphasize circulation, scale, and open spaces.

In the actual location of new trees a blue print of the street survey should be taken out in the field, and the actual positions of the proposed trees determined with it. In this way it is possible to locate all trees carefully and, with the essential points in view, determine the advisability of planting.

The next step is the arrangement and planting of the shrub growth. The schemes, as generally worked out, provide for park-like planting of filler shrubs, with the accent shrubs varying to suit the taste of individual owners. The larger masses of trees and shrubs are not used for the value of individual specimens, but for the primary purpose of back-ground shrubs in any garden-like treatment, where herbaceous plants and accent or specimen shrubs require setting off to advantage. This gives to each place an individuality all its own, and at the same time lends a character to the design that will within a few years give the street a unified scheme of planting.

Wherever competent landscape-designers have been employed, coöperative planting has given satisfaction. The cost is minimized by the purchase

of wholesale quantities of shrubs and the division among many of the expense of design.

AN AMERICAN HOME

The typical American home may be defined as a suburban residence costing from four to fifteen thousand dollars, and having a lot from sixty to two hundred feet wide. It is planted more or less intelligently as a rule, but it can be safely said that a judicious use of plant material is not one of the distinguishing characteristics of the American suburban home. There is too great a tendency to use plants because the neighbors use them, or because the traveling nurseryman has forced them upon one, or, a better reason, though not always followed by a better result, because they happen to be favorites.

When unsuccessful planting is found about suburban homes it is particularly tragic, since it is really a love of plants and a vague groping after the beautiful that have inspired many a pathetic planting scheme. Lack of success in suburban planting can usually be traced directly to a readiness to plant something just to see it grow, and to a failure to grasp the principles which underlie intelligent planting—an understanding of the eco-

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FIGURE 38. EAST AVENUE, ROCHESTER, N. Y.
A good type of community planting

nomie and the esthetic sides, each with its peculiar function.

The simple beauty of a well-kept lawn, with its smooth texture, is too little appreciated for its effect in setting the house well back from the street, and creating the idea of spaciousness which is always desirable (Fig. 38). Too often the middle of a fine stretch of grass is grubbed up ruthlessly, and the inevitable round bed of red geraniums or King Humbert cannas introduced. Geraniums and cannas are all very well in their place, but that place is certainly not the middle of a lawn at the front or the side of a house. It is this sort of mistake which is most frequently made. Things interesting or beautiful in themselves are put in positions that minimize not only their own beauty, but that of their surroundings.

In designing the landscaping for a moderate-priced American estate, the tastes of the owner must be understood and his personal likes and dislikes weighed and scrutinized carefully, for the house and grounds are his property, and should not only appear to advantage, but ought to reflect his taste as well. It must be admitted that it is often necessary to educate the client's taste considerably, but the results will justify the extra effort.

If the client likes flowers, a garden may be included in the scheme, and planting of an intimate and diversified character may be employed, as his interest will insure their care and maintenance. If, on the contrary, he is not particularly interested in things horticultural, the planting should be more formal, and such as may be easily kept up.

The first large considerations of the design are general approach, circulation, and views obtainable. The best rooms should of course be located so as to obtain the best views. The service portions of the house and grounds should be separated as definitely as possible from the rest of the estate.

If the lawns are to be used for entertaining, they should be kept free of planting, and screened about the edges to give some degree of privacy; but if guests are not to use the lawns, the shrub masses may divide them to a great extent.

In its broadest aspect, the lay-out of the design problem may be divided into three parts: first, the private portion for family use; second, the semi-public part, which is to be seen by the guests, and lastly the service portion, which is for strictly utilitarian purposes.

The private part of the grounds should contain

the family flower-garden, and that is the only place where flowers should appear except for accent purposes. The garden should be ample in extent, and should communicate directly with the living portion of the house. It will be divided from other parts of the grounds by economic planting; that is, screens of shrub masses.

The semipublic divisions of the estate include the entrance walk and drives, and such other parts of the grounds as may be accessible to guests. Here the planting is simpler and more formal, with less individual interest. It consists mainly of shrubbery masses the primary purpose of which is divisional and for screening; and if the space is sufficient, there may be a few trees. The space is to be used as an outdoor room and for purposes which do not suggest its own (horticultural) interest. Consequently, the second quality of shrubs will usually be chosen.

The service walk should go by the most direct way to the service entrance. If the grocer-boy wears a path across the grass, the owner should thank him for pointing out a weakness in the design; for if the path had been located properly, he would have used it. The object of a service walk or drive is to secure the promptest and most effi-

cient service. Any "landscaping" of service circulation which interferes with convenience is meretricious. If lack of space or difficulties of grade necessitate that the service walk be in part combined with the main entrance, the service part should be treated in the simplest fashion, and even the main entrance portion less elaborately, otherwise the contrast will be too marked.

The most interesting and varied planting must be reserved for the private portions of the grounds. Here the trees and shrubs are to bear close scrutiny, and flower value is very desirable. If any exotic planting is to be used, this is the place for it. There may well be an emphasis of horticultural interest, and an informality that would not be in keeping with other parts of the scheme.

The semi-public part of the grounds is planted in masses, the object being to tie the house in with its surroundings and make the transition from plant material to brick, wood, and stone as little of a shock as possible (Fig. 7). Shrubs should be planted about the base of a house to break the line of transition. Vines are also useful for this purpose. It is not necessary to plant a regular group of shrubs all about, like a "feather boa"; in fact, that sort of planting does not improve appear-



FIGURE 39. A BALD TREATMENT OF A SMALL CITY STREET



FIGURE 40. UNKEMPT SURROUNDINGS

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Figure 1

ances. It will be better if the shrubs are massed rather irregularly, with emphasis at the corners of the house.

Two plans of distinctly different treatments of the same problem are here shown (Figs. 41, 43). They may serve to give an idea of the many and various possibilities.

In the rendered plan shown in Figure 41 the entrance and service drives are combined, and there is a public and semi-public portion, the latter containing a service court, a garage, a laundry-yard, and a vegetable garden. The small private garden, laid out on formal lines, with its turf panel and its rose garden, is sharply separated from the semi-public part by high and thick planting.

The colors in the planting scheme (Fig. 42) have been chosen so as to separate the yellow and the blue greens, putting the blue green at the farther end to exaggerate the color impression of perspective. Blue greens and yellow greens never seem to go well together without intermediates, and they have consequently been separated here. A decrease in leaf size will also heighten the illusion of distance. The planting about the private lawn is first for screening; interest of outline is a secondary consideration. Lastly there is some

consideration paid to the individual interests of the plants, but this is considered of minor importance.

Where individual interest appears, it is centered in the accent plants. In the plan shown these are the spiræa Van Houttei, spiræa Anthony Waterer, and Deutzias. The middle of the rose garden is occupied by a sun-dial, the only architectural accent. Other flowering shrubs used are lilacs, *Kerria Japonica*, hydrangeas, and the *Viburnum sterile*, or snowball.

In the second plan (Fig. 43) different material is used, and a number of flowering-shrubs, well distributed in seasonal development, appear.

Places of a smaller scale may be treated with an even greater degree of informality, though the observance of the principles of design—that is, the direct and beautiful expression of function—must always be insisted upon (Fig. 13).

SMALL PLACES

One of the greatest needs for planting exists among simple and cheap surroundings, and the very inexpensive place may be helped by planting even more, perhaps, than its showy and elaborate brother. On account of the item of cost it is as-

Abstract

sumed that all landscape work about inexpensive houses will consist entirely of planting.

Suppose a small house of six or seven rooms, with a lot fifty or sixty feet wide and from one hundred to two hundred feet deep, is to be landscaped. Often in the smaller cities the owners of small houses keep hens, and there is frequently a tiny stable or a garage at the back of the lot. So far as the short-sighted owner can see, the idea is entirely utilitarian, for he has allowed the immediate saving to his pocket-book from the poultry income to usurp the place of the far more important problem of keeping his possessions in such a salable condition that he can get the greatest cash value for them at any time.

Almost everybody recognizes that a fresh coat of paint makes a house sell for much more than it would have brought without the new paint, *plus* the cost of the painting. Too few realize that planting may do more than the paint to increase the value of a building, and at a much less cost.

If there is any planting about such a house, it is generally a straggly flower-garden because the woman of the house loves flowers. She thinks of them, however, not in connection with the place itself, but only for their own intrinsic beauty.

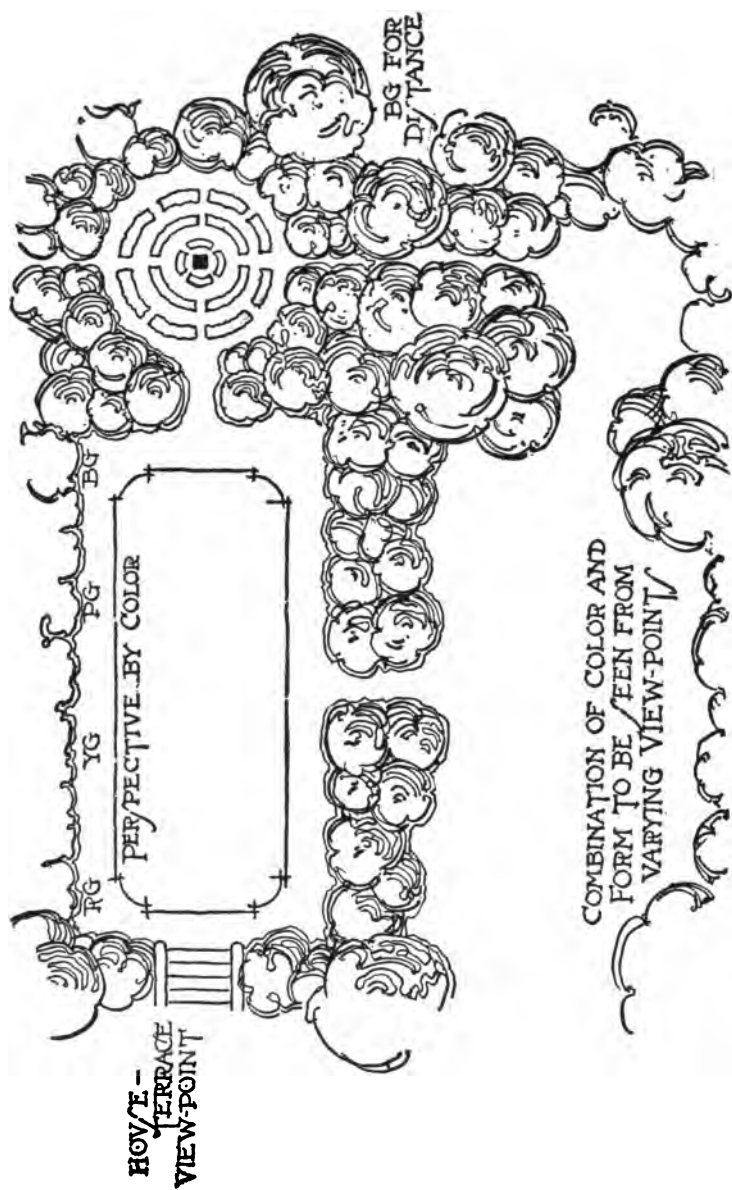


FIGURE 42. PLANTING FOR COLOR EFFECT

Clothes-poles straggle irregularly over the back yard, pitching this way and that at dangerous angles. The ash-piles and the chicken-coops hold melancholy sway over the rear of the premises (Fig. 22), which are so unkempt as to make it seem quite natural for women to appear there in unstudied costumes and curl-papers.

The picture has not been painted too black. In some of the most prosperous of our small cities and towns in the Middle West respected members of the community often allow their houses and grounds, exteriorly at least, to present a most disreputable appearance. Things that litter up the inside of the house and are thrown out to be carted away are frequently left where they are dropped, and allowed to remain there for months. It is not that way inside the house. There all is order and precision; but, as a rule, the average American citizen is so obsessed with his own individual opinions and problems that he does not remember that he has a duty to his neighbors, and that that duty may consist in keeping the surroundings of his house in a decent condition.

How may this hypothetical, and too often actual, place be helped without too great an outlay of money, and in such a way that its owner will take

a greater pride in it and live in it more comfortably?

As usual, the really utilitarian aspects must be considered at the outset. The chickens must be restrained and put in sanitary yards and houses which will not only look better, but will improve the condition of the poultry and keep them from straying away and getting lost. These houses should be at the extreme rear of the lot, unless it is bounded by a stream or lake, or a view of some sort. In that case they can be put at the side and toward the rear.

The clothes-line need not stay out at all seasons; indeed, it will collect soot and soil the clothes if allowed to do so. The posts to which it is fastened should be strong and erect, and planted firmly in the ground. It is an easy matter to paint them and allow vines to climb over them so that they will be useful and ornamental at the same time. If the line is supported strongly at the outside boundaries of the lot, it will not need much auxiliary bracing, and consequently as soon as the clothes are dried a lawn of considerable size is available for the rest of the week. This affords space for children to play, enables certain kinds of work to be performed out of doors pleasantly, and

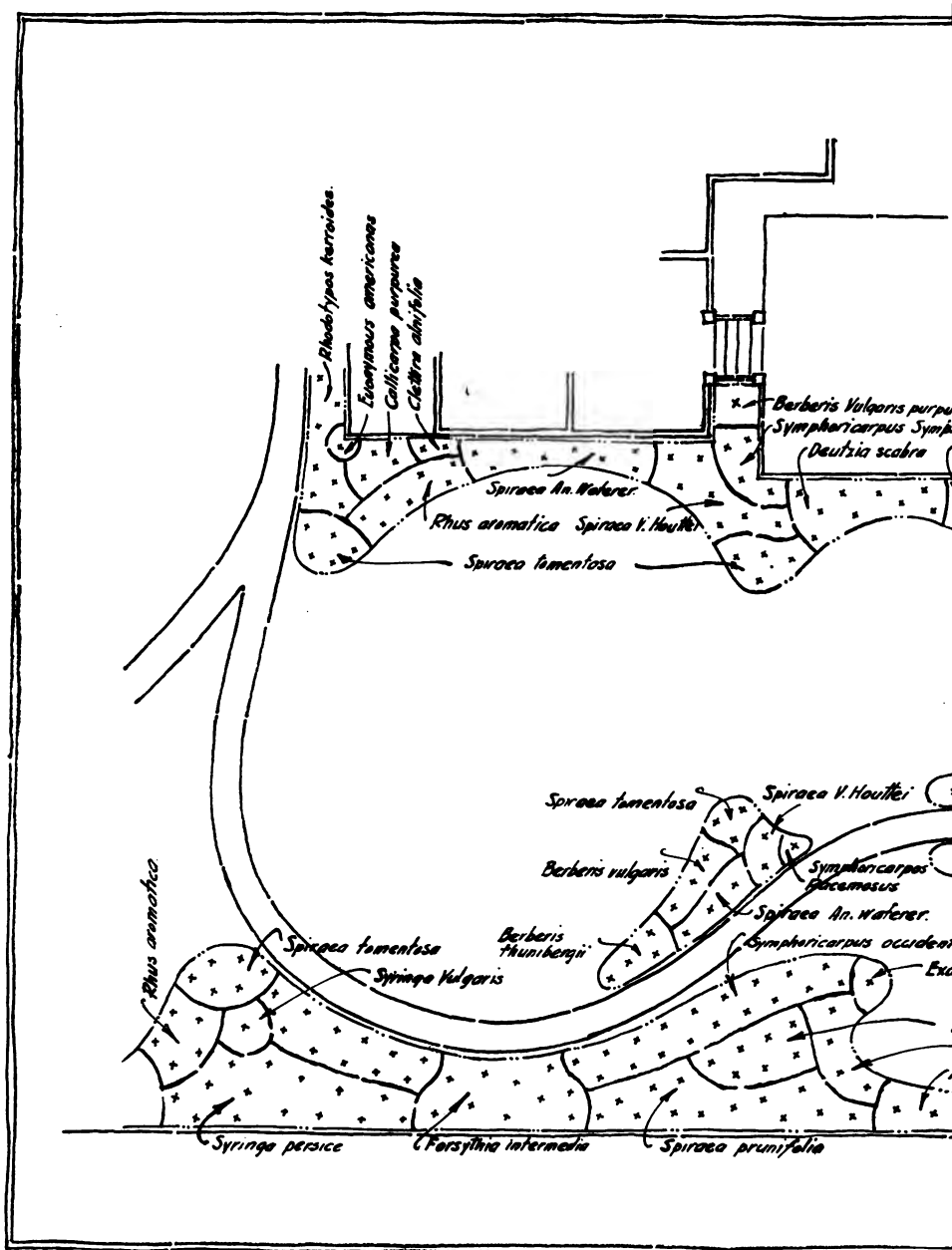
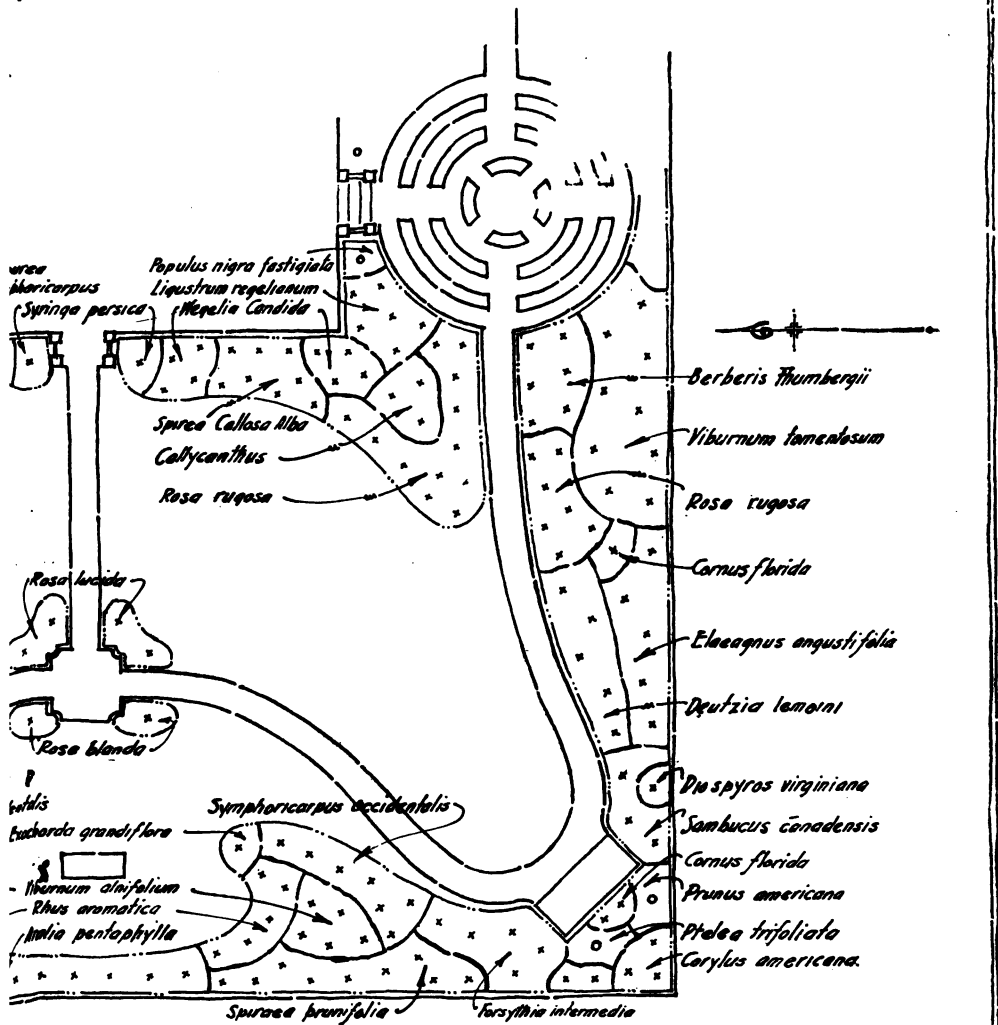


FIGURE 43. PLAN FOR THE DEVE



DEVELOPMENT OF A SUBURBAN RESIDENCE

gives the "out-door room" sadly needed at the present time.

Thus by moving the chicken-yard and using sensible clothes-posts, the appearance of the grounds has greatly benefited. It will not be necessary to warn against dumping garbage and ashes in such a yard, because hardly any one is stupid enough to deface a large area of greensward, unless it is with the proverbial red geranium bed. That bed will not intrude in this instance, because the space must be left clear as a laundry-yard. Just so soon as the back part of the grounds have been set to rights, the result will be felt in the neighborhood, and the chances are that others will follow suit.

As has before been mentioned, the front part of the grounds are semi-public in nature, and that will not be the place for the indulgence of personal whims and vagaries. Often it is only the love of bright colors and the wish that their surroundings appear neat that lead people to disfigure their grounds. Behind the house one can be as independent as possible without ruining the appearance of a street. Of course it always happens that the house that is most noticeable is, in the owner's eyes, the most admirable residence on the street; but that is almost without exception solely on ac-

count of the point of view. It reminds one of the little Irish lady who proudly asserted that her son was the only man who was "in step" in his regiment. It is certainly the consensus of opinion that if the landscaping of a house is to be satisfactory for any length of time, it cannot be striking in appearance.

Simplicity will mean a saving of money, for it will appear that the simplest thing to do is to have an unornamented front lawn, and there is consequently no necessity for purchasing plants for that part of the grounds. Of course shrubbery masses to emphasize corners and boundaries are very desirable (Fig. 13), but they cannot be considered where it is necessary to plant for the least possible outlay. When one comes to the house itself, planting of some sort must be done to break the hard line where the brick or stone walls of the basement appear above the surface of the ground.

There is often a porch at the front of the house, and this will make a good trellis for climbing-vines. A row of bright-colored plants about the edge will break the line so far as form is concerned, but, on the other hand, the brilliant color will call attention to the objectionable feature which it was intended to soften. Ten cents' worth of seed will

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WORK



FIGURE 44. ATTRACTIVE AND PRACTICAL SCHOOL SURROUNDINGS

supply enough morning glories, Japanese hops or wild cucumber vines to cover a very large porch in a short time. Even the edible "scarlet runner" bean can be used for this purpose.

At the back there must be some planting to screen the hen-yards, and it is quite possible to use food plants for this purpose. Currant-bushes make a very good screen, or the handsome common sunflower will grow into an impenetrable hedge in a short time. The seeds will also serve as food for the hens, so a planting of sunflowers will combine esthetic and economic values.

Now arises the question of flowers and vegetables. Flowering shrubs, which make a good screen, and a background for perennials as well, can be planted along the sides of the lot, or if these are too expensive, vines, hollyhocks, or sunflowers may be substituted. The vegetables may go toward the back, as clear space must be provided for the laundry-yard. A very informal use of flowers will be perfectly satisfactory, as they will necessarily be massed on account of restricted space, and the other planting will not be so severe as to insist upon elaborate design.

The success of such a planting scheme will depend entirely upon its usefulness.

SCHOOL GROUNDS

In this so-called "age of the child" a great deal of nonsense is being talked on all sides by more or less well-informed enthusiasts about the duty of the public to the rising generation. Amid a vast deal of sentimental and useless agitation no small amount of good has really been accomplished, notably in providing recreation parks and playgrounds and in making school grounds more attractive and useful.

It is essential that children should have plenty of air and sunlight and room for running about and playing active games (Fig. 44). The more attractive school grounds can be made, the more the children will use them, and will reflect the pleasant out-door atmosphere within the buildings themselves.

As in all planting schemes, school grounds have their esthetic and utilitarian features, and it is advantageous if the decorative planting can have an educational emphasis as well. There are many common and beautiful trees and shrubs which every one should know, and these ought to be used wherever possible, in order that the children may become familiar with them.

Utilitarian planting will take the place of the traditional ugly fence to divide the playgrounds into areas for little children, for the boys, and for the girls.

The best chance for ornamental planting is about the entrance to the grounds and close about the building. Playgrounds proper should not be shaded, as it is best for the children to play in the sunlight; but trees may well be used in other parts of the grounds to serve as a background, give shade for rest from active sports, shelter sand courts where the little children play, and provide contrast with the large open areas. Seats may be placed beneath the trees.

In planting modern school grounds the idea is not to have them useful during a few restricted hours of the day only, while the building is open and school is in session, but rather that they may, in a way, take the place of the old-time village green and be permanently attractive and serviceable. It will be seen that this point of view is quite directly opposed to that which prevailed only a few years ago, when to all outward appearances the school buildings were very like penal institutions. "Shades of the prison house" seemed to be their rightful atmosphere.

Grass may be used to advantage about the entrance and those portions of the grounds which are not devoted to play, but it is useless to attempt to keep turf in good condition under children's flying feet. Grass borders may nevertheless be used to good advantage about the boundary-edges of the play areas and shrub masses. Here they constitute a real decorative feature, being used as a strip of bright green color rather than as turf.

It will be impossible to get much variety into the economic planting, as trees and shrubs sufficiently thick and hardy to serve the purpose are few. The only chance for any variety will probably be in the massing and handling of shapes in a large way. Any flowers or flowering-shrubs should be used in the decorative portions of the planting, and as far away from the playgrounds as possible.

In connection with school grounds little garden plots are often laid out which are turned over to the children to cultivate, and the results are surprisingly satisfactory. The children in this way obtain a first-hand knowledge of plant growth, and often acquire information which is useful at home. More than anything else it teaches them to take a proper pride in the appearance of their surround-

ings. Wherever space permits, school gardens should be encouraged.

Greater attention can be paid to the decorative side of planting in institutions of higher learning, which presumably maintain more orderly conditions. Natural features are taken advantage of in many cases with charming results. Cornell and Vassar have beautiful campuses because they have utilized the natural topography to the best advantage. *

Planting should be of the park-like variety, with some tree masses, in other places small groups, and single specimens of more highly specialized types. It is a mistake to use too great a variety in planting of this sort, for it destroys harmony; and since American institutions of higher learning are notoriously irregular, at least in so far as architecture is concerned, it is essential that there be some unifying element, which may well be the planting.

A general informality should characterize the planting unless the plan is symmetrical and the axes highly developed, in which case the formal type is more suitable. An arrangement of buildings like that at the Harvard Medical School calls for formal planting on account of its uniformity,

while the Cornell campus would be ruined by a rigid formality.

Walks and drives about university grounds are often laid out in ludicrous fashion. With short intervals between classes, it is essential that students have access to the buildings by the most direct routes, and it is often amusing to find how studiously these routes appear to have been avoided by the walks in the majority of cases. Those who have been so careless as to lay out walks in a wandering "artistic" way, through a total misapprehension of the laws of beauty, take refuge in plastering "Keep-off-the-grass" signs about the campus. Of course they are cheerfully disregarded by the students, who realize that in this case at least their time is valuable, and consequently wear new paths along more sensible lines. Sometimes the authorities are astute enough to perceive the justice of the implied criticism, and construct paths along lines really necessary for convenient circulation. The result is always more pleasing than the tortuous scheme that existed before.

Another point to be observed in constructing walks on college campuses is the number of students who are to use them, and the amount of traf-

fic that must pass when going in opposite directions. This will determine the width of the walks, and if the walks have not been laid out at the proper width the designer will be rewarded by having the turf worn away for a foot or two on each side of the walk.

The drives, if there are any, should be so constructed that visitors may see the entire institution, from the outside at least, without leaving their car or carriage. For this reason it is well to make the drives indirect, as they are for esthetic rather than for economic interest. If they were made straight, they would be utilized immediately as short cuts for heavy teaming and noisy motorcycles.

Flowers, except flowering-shrubs, are rather out of place in a scheme of this sort, although an occasional English border might add an unobjectionable accent. Too frequently in a problem of this kind masses of accent material are introduced, and circular flower-beds are permitted to dissect long stretches of beautiful turf, displaying occasionally hideous color combinations. These are entirely foreign elements, and it is not in keeping with the spirit of an educational institution to exhibit planting of such an ostentatious character. Where

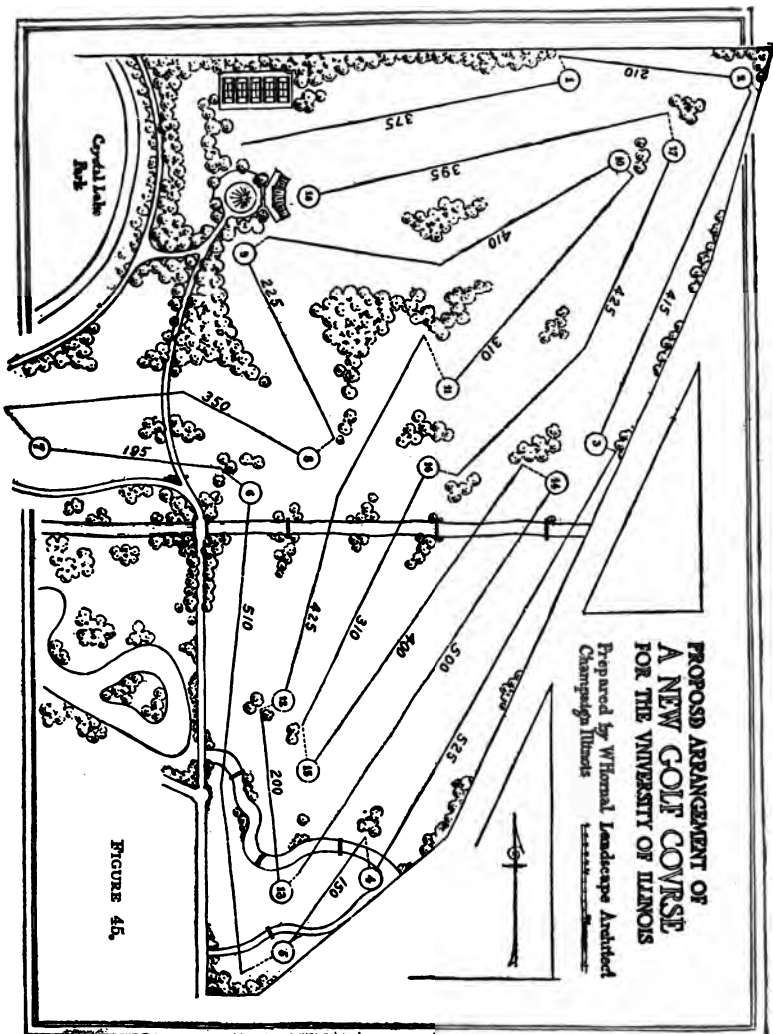
there is a chance to use a large stretch of turf it is well to take advantage of it.

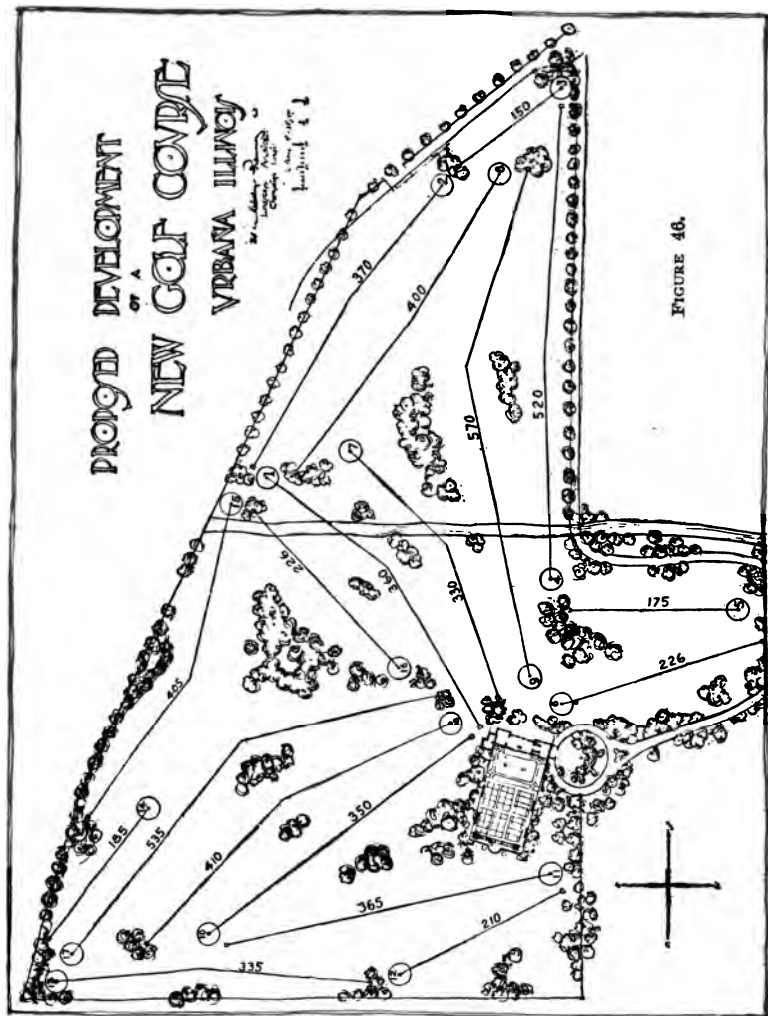
GOLF-COURSE

In laying out a golf-course (Figs. 45, 46) the final appearance of the design will depend directly upon the clearness with which the purpose has been kept in view, and the ingenuity with which the topographical features have been utilized.

The purpose of a golf-course is recreation, and consequently it is frequently found in connection with country clubs. There is certain to be a house for lockers and shower-baths for the members, and in a club which is at all pretentious the building is more or less elaborate, with recreation, dancing, and reading-rooms, verandas, and other comforts and conveniences. The golf-course itself is strictly utilitarian, inasmuch as it is to be used for a definite purpose, although this purpose is the playing of a game.

The course necessarily covers a large amount of ground, and is generally naturalistic in planting. Any planting that interferes with the game is out of place, and therefore all elaborations must be kept near the club-house. The degree of elaboration will depend upon the wealth of the club and





the general appointments of the building. But even if the building is very elaborate, the planting should be restrained sufficiently to keep it in harmony with the naturalistic planting of the links.

The first consideration after the site has been determined is to make the best use of the topography. Rather might one say that topography has a great deal to do with the selection of a site and the laying out of more or less difficult courses.

The contours should be generally undulating, though with some variety and a considerable amount of rough ground and natural hazards, like swamps, ditches, impenetrable growth, and abrupt changes, such as steep banks or small cliffs and water. There should, however, be a larger area of smooth and even ground to make the hazards an intensive feature of the course, lending new interest by the introduction of a different type of play.

In laying out a course, the general direction of the holes should be north and south, and the general direction of play between holes should run counter-clockwise. Within these limitations the holes should be laid out with as much variety as possible, so that the different phases of the game may be emphasized in playing the various holes,

and in this way the topography will be of great advantage if it varies considerably.

The first hole of a golf-course is always a long one, and is generally straight. In nine-hole courses there are two short holes, and in an eighteen-hole course there are generally four short holes, two for each half. In nine-hole courses the short holes should be four and five; in the eighteen-hole course five and six or six and seven, and thirteen and fourteen or fourteen and fifteen.

The distance between the holes should be determined by an even number of average shots. The good player should be able to make a hole in three, four, or five shots when playing his average game. The distance should not lie between three and four shots or between four and five, but should be such as will cause the player to use his best efforts to play the hole with an even number of lengthy shots.

If the club is situated in the country, the clubhouse should be nearest to the means of communication,—railroads, trolley lines, or highroads,—so that it may be directly accessible to players who have come some distance and have only a limited time to play. For this same reason, as many players do not have sufficient time to play the entire course, holes nine, fifteen, and eighteen are gener-



FIGURE 47. HORTICULTURAL ACCENTS
White birches introduced to emphasize a vista

Figure 1

ally located near the club-house, so that the players may stop whenever convenient and be at no great distance from the house.

The planting of the course, so far as the matter of playing it is concerned, is strictly economic. The best use of existing features such as trees and shrubs should be made, and they are usually preserved to supply shade or act as natural hazards. No planting of any sort should be used unless it aids the game, and if the planting is not chosen as a hazard, it must be kept back from the line of play. Trees may often be used near a hole to supply shade in which the players may rest.

Esthetic planting is confined very closely to the immediate vicinity of the club-house or is used about the boundaries of the course. This is really the only function esthetic planting may have in a good golf-course, for it is out of place in ground which is played over.

In planting a golf-course formal or gardenesque planting may be used by the club-house, but the rest of the scheme is naturalistic and consists mostly of existing features. This does not imply that a golf course should look barren and uninteresting, however, for the natural features may be most attractively displayed.

A COUNTRY ESTATE

Country estates are of two sorts, those in which farming is the primary consideration, and those where no income is to be derived from the farming, making the economic feature of secondary importance.

Country estates having farming for primary interest may be divided into two classes, those in which production of crops is the single purpose, and those in which the production of crops displayed to the best advantage is aimed at. This is the sort of estate that the gentleman farmer would own (Fig. 48).

In the second class of country estates crops are used to support the estate itself, but not for the purpose of deriving any additional income. In still another division they minister to only one feature of the estate, which class is to be used for the purpose of entertainment only. This self-supporting feature may be vegetables, cut flowers, or fruit, intended solely for the entertainment of the guests of the owner (Fig. 49).

With the main features of the problem clearly in mind, the land selected should be as nearly as possible suited to the purpose of the estate, pos-

sessing the greatest number of natural features that will work in to advantage with the scheme in hand.

In such an estate as is demanded by the following problem, the entertainment of city guests by out-door sports and the general pleasing appearance of the design are of equal importance.

Entertainment is to be the main purpose of the estate, and its position in the country will mean that out-of-door amusements are to figure largely in this entertainment.

The elaboration of the scheme along the line of out-door sports will depend entirely upon the wealth of the client, and will determine the type of development to be employed, and the introduction or exclusion of features which require special expense.

If the estate is to be designed on lines of great magnificence, there may be formal flower-gardens, conservatories, and even hothouses for the growing of vegetables out of season; private golf-courses, tennis-courts, bowling-greens, bridle-paths; in fact, there is scarcely any limit to the development of an estate of this kind where the money expended is of no object.

The size of the subdivisions of the scheme will

be determined by the number of guests who are to be entertained. If three or four or half a dozen come at one time, one tennis-court will be sufficient, but if twenty young sportsmen are in the habit of spending week-ends there, three or four courts will probably be found necessary.

Wherever possible, the natural features of the countryside should be retained and emphasized to give an appearance of freedom and naturalness. For instance, if there is a plot of level ground at a short distance from the house, which is placed upon a slope, this plot should be chosen for the location of the tennis-courts rather than spoil the slope nearer the house for the sake of convenience. All these points of purpose as regards sports, gardens, size, and expense of stables and garages must be determined before the house itself is located. The house itself should really appear as a sort of key to the whole scheme, for its position will determine, or appear to determine, the location and the accessibility of all the parts, although these parts, by their relative importance, have actually determined the position of the house.

The house should be designed so that the rooms which are most often in use will have the most favorable exposure, and take advantage of views.





FIGURE 48. HOLM LEA, BROOKLINE, MASS.
A typical American country estate with horticultural interest

After the location of the rooms has been determined upon and the planting near the house is being considered, accents may be so arranged as to attract the gaze of people within the house toward these views. In Figure 47 an open space in the trees has been left so that the occupants of the house may look out upon Lake Michigan. The white birches used in this position serve to draw the attention to the view by their color.

When the location of the house and the subdivisions have been roughly determined, the circulation is the next important consideration. The forecourt, from the entrance to the house, is the keystone of the circulation scheme, and upon it depends the efficient handling of traffic of all sorts, whether for pleasure or utility. It should be a kind of out-door room and center of radiation; it should provide for the parking and handling of carriages and cars, and its exit toward the stables and garages should be studied on the one hand, and on the other its communication with the reception-rooms of the house should be given equal attention. The number of vehicles to be accommodated will determine the scale of the court.

Of first importance is the communication of the main highway with the entrance court. This

drive is a sort of semi-public room. There is often another road for service, tradesmen, and heavier teaming, and this is sometimes entirely separate, sometimes one with the pleasure road, and sometimes the same over part of the course with a branch-off as the service part of the ground is approached. Wherever the service road is a separate feature, it should be made as unobtrusive as possible, as its purpose is strictly utilitarian. The planting of this road is therefore essentially economic.

Before the shapes of the planting masses and areas are finally settled upon, the appearance of the estate should be considered in a large way, and this consideration should be divided into two members, the public and private views. There may be an intermediate or semi-public class. Certain parts of the estate are visible to all passers-by, and this aspect is known as the public view, and should be treated accordingly. There are semi-public views, or glimpses caught between the drive and the main thoroughfare. These would be seen by those coming to the house.

There is then the more private or intimate part of the ground, which is reserved entirely for the use of the owner and his friends. This should be



FIGURE 49. MONTACUTE HOUSE
A typical English country estate with emphasis upon entertainment of guests

visible only to them, and the presence of the private part of the grounds need not be seen at all by strangers. Stables and service buildings will come in the semi-public part of the scheme; gardens and recreation ground will fall in the private class.

After the shape, size, relative importance, and communication of the different members of the scheme have been considered in large masses, they are then each studied in detail, always bearing in mind the fact that details of whatever sort should aid in creating a general impression rather than detract from that impression.

In the method employed in working out a plan of this sort, first of all topographical models are made, that the designer may familiarize himself thoroughly with the lay of the land. After the general location of the main features, and after details of cut and fill in connection with the house and more formal elements of the plan are decided upon, topographical changes should not be made in other parts of the scheme.

The location of all these features is determined by means of "thumbnail sketches," tiny plans so small in scale as to prevent the consideration of anything but the most general grouping and posi-

tion of the largest features. Of course the topographical model is based upon a careful survey of the grounds, and the thumbnail sketches are made with due consideration for all the sections and elevations. Then is determined the position of the large lawn area, the boundaries of which are to be planted. These are in turn subdivided more or less by interior planting to keep the open space in scale with the planting areas, and to secure the satisfactory divisions so as to frame distant views, and create interior views and vistas.

In the two plans for country estates shown in Figures 50, 51 the general emphasis of the design is placed entirely on such an arrangement as will secure the best features for entertainment of guests and for out-door amusements. In these plans the circulation is the main feature of the design. The large open stretches of lawn and the trees are used simply as boundaries to break up the lawn areas, and are arranged so as to relate carefully to the more formal or architectural parts of the design. The architectural, or formal part of the design is in turn located in direct connection with the buildings, leaving the more informal portions away from the architectural features. In the general arrangement of roads and planting it

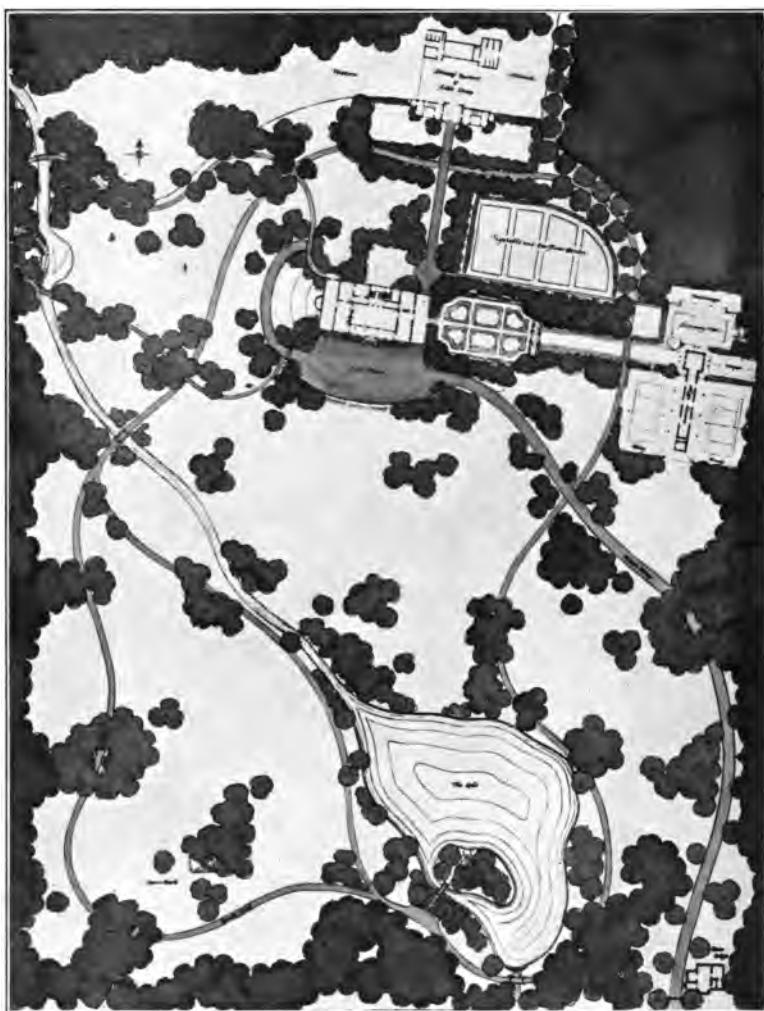


FIGURE 50. A PLAN FOR A COUNTRY ESTATE

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will be noticed that the natural contour of the land has been an important feature.

The success of a design of this character depends to a great extent upon the position of the planting areas, and the selection of plants which will bring out in elevation the general idea that the flat plan conveys. In case trees are found on the property, the whole design should relate carefully to these.

In both of the solutions shown a feature has been made of the small stream which existed on the property. In one design the water has been featured near the house in the formal garden treatment, and in the other it has been treated largely in an informal way. A plan of this character should be made in consultation with the architect who is to design the buildings. This will result in the most satisfactory solution of the problem in regard to general form and location, and will produce harmony in the architectural and landscape design.

VI

GARDEN DESIGN

IN a country where gardens are the exception rather than the rule, it is disappointing to find that the existing specimens are not always such as would inspire a man to acquire one of his own. There is either an unkempt riot of bloom or a melancholy severity that says "Keep off the grass" much more pointedly than any sign. There is the obvious love of display on the one hand, and the passion for growing things on the other, that will pay no attention to the selection of material.

The American garden, with, of course, many well-known exceptions, is frequently thrust under one's nose, so to speak, and, as the show-part of the estate, is given the most prominent position. The idea is not noticeably present that privacy and solitude are part of a garden's charm, and that the desire for seclusion alone may lead to the acquiring of a garden.

It is to such a garden-loving race as the English that we must go to find out what gardens can really

do for a man and for his home. Nevertheless, an intelligent interest in gardens is daily growing stronger, and our gardens are not so few and far between or as unfortunately conceived as they were a few years ago.

Of course a garden may have a more or less public side, but if it is privately owned and possesses no privacy, a great chance for enjoyment and even for beauty of design is lost.

Garden design is one of the most interesting phases of landscape work, because it combines many features found separately in other fields of landscape design. The garden should be an intimate sort of thing, shutting one in more or less, and centralizing one's interest in the things which it contains. As already mentioned, there should be more privacy in a garden than in any other part of the estate. It may sometimes be used as an out-door room (Fig. 52), and in many cases where the climate permits a great deal of time is spent in the garden rather than in the house.

The great prevalence of gardens in England seems to be in the face of climatic conditions, so far as occupying them is concerned, but the enormous amount of wet weather is so well suited to the growing of all sorts of garden planting ma-

terial that this fact must be accountable for the numerous gardens. Notwithstanding these drawbacks, they are so beautiful as to be inspiring and satisfactory though it may rain perpetually. The out-door room feature is always there, to be sure, and can be viewed from within, when it is impossible for one to be out of doors with any degree of comfort.

Garden design is probably one of the oldest forms of work in landscape gardening, and in its most formal aspect was very highly developed by the ancient Romans. It is known that the Greeks were the first to use bulbs in planting, and the Egyptian gardens, particularly those of Thebes, were famous. The younger Pliny in his writings described gardens with clipped box hedges and parterres cut into shapes of animals, displaying many of the fancies which many centuries later ran riot over Europe in topiary work.

The Roman garden was necessarily formal, because it generally occurred within the house itself (Fig. 1) as a central court laid out as a garden. This necessitated a rather rigid and architectural, though highly decorative, treatment of the plants used, and in Pliny's time the formal garden had attained a high degree of excellence.

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FIGURE 51. A SECOND PLAN FOR A COUNTRY ESTATE

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The Renaissance gardens of Italy were laid out as far as possible on the lines of the old Roman gardens. In fact, Lanciani asserts that the famous gardens of the Villa Barberini at Castel Gondolfo are laid out almost precisely upon the lines of Domitian's villa. The great interest in antiquities which prevailed during the Renaissance led to the unearthing of all sorts of data concerning ancient gardens, and also to the use of antique sculpture as accent material (Fig. 5).

There is a great deal of talk nowadays about the uselessness and artificiality of formal gardens, and the necessity for "going back to nature" and copying gardens after the fields and woods. This point of view has been very ably attacked by Mr. Reginald Blomfield in his book "The Formal Garden in England." It is very well worth while reading for any one who wishes to make a careful study of the formal garden.

The fallacy of the nature-lovers, as pointed out clearly by Mr. Blomfield, is that nature is always harmonious and simple, and that it is a sacrilege to attempt to change her appearance; yet we frequently find that the very men who are insisting strongly upon copying nature are those who will change the whole face of the landscape if allowed

to do so, introducing features of a sort which are entirely out of place, and transporting some "bit of nature" to a spot where it would never have occurred had nature herself been allowed to dictate.

The point that is missed by those who argue strongly against so-called "rules and regulations" in the designing of landscape, and indeed in all branches of the arts, is, that man's handiwork is of necessity unnatural-looking. For this very reason, if the planting about and in close connection with the house be absolutely naturalistic and unrestrained, the house will appear more unnatural and out of place than ever because of the insistence of the surroundings upon contrasting features. If the planting about the house—and this applies to gardens, because they are generally found in close proximity to the house—is planned carefully to show that natural objects have been used by man to express his ideas and to harmonize his house with the countryside, of which it is a part, by combining nature with design, the result is much more worth while than a tangle of naturalistic planting, however good that may be of itself and in its own place.

Up to the seventeenth century landscape gardening was essentially garden design. Garden de-



Photograph by Anderson

FIGURE 52. THE GARDEN AS AN OUTDOOR ROOM, VILLA PAMPHILI DORIA, ROME

1960

sign in turn was really included in the profession of architecture, and almost all the architects of the time designed the setting as well as the building. In these early gardens we find that garden and house form one composition, and that the architectural features predominate in the garden (Fig. 53). This is essentially the emphasis of the formal element, and it is well illustrated in the Italian gardens of the fifteenth and sixteenth centuries. The villa was designed as the controlling feature of the grounds, massive and formal in every line. The degree of elaboration depended upon the type of architecture used, the size of the space available, and the amount of money to be spent (Fig. 55). The design in its larger aspects was simple and direct, bringing the villa into a close relation with the grounds, and the grounds in turn with some distant view or special landscape feature such as water, plant growth, or topography. The planting was mainly evergreens (Figs. 54, 55) of large scale, using the decorative plants as accent. The whole garden was designed for use, and was considered really as an out-of-door building, the outer wall as a framework, and the interior hedge and plantations as divisions or partitions.

In feudal times, preceding the development of the English garden of the Elizabethan period, the garden was of necessity in the castle court itself, or within an adjacent walled inclosure, and architectural surroundings were therefore considered indispensable. Even after the need for defenses had passed, the idea of architectural propinquity had been so thoroughly stamped on garden design that the outcome was the formal garden.

Later, beginning in the eighteenth century, when horticulture came to be more commonly practised as a profession, and landscape gardening was regarded as the province of horticulture rather than of architecture, the gardens were considered as entirely separate problems, making no attempt to harmonize with the house, because the emphasis was laid entirely on the horticultural side. So great was the enthusiasm for the new styles of naturalistic planting that wonderful old gardens, literally hundreds of years old, were ruthlessly chopped and torn up to be replaced by the sentimental wilderness popular with the romantic tendencies of the age.

The craze for the open lawn, with its conventional border of shrubs of garden-like or wild character, and its regular shave once or twice a



Photograph by Anderson

FIGURE 53. LAVISH ARCHITECTURAL TREATMENT, VILLA ALBANI, ROME

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week, is in every way as artificial a conception as the formal garden, and it is very frequently less beautiful. Consequently, at that time a controversy came up between the landscape-gardeners and the architects that has continued down to the present date. The architect looked at the subject entirely from the point of view of design, and the landscape-gardeners considered only the plant material to be employed, neither contestant realizing that each side was of equal importance.

The arguments concerning the relative merits of formal and informal design, which really may be a heritage of that controversy, are looked at from an entirely different point of view at present. The architect is beginning to see that it is impossible for him to understand the many things necessary to good architecture and at the same time have a thorough knowledge of horticulture, because of the immense possibilities of both subjects. This would necessarily hinder him from indulging in extensive landscape practice. The horticulturist also realizes that a sound knowledge of plant material alone is an entirely inadequate equipment for the successful practice of landscape design. Consequently the architect and the landscape-gardener are now working more in harmony, each admitting

that it is possible for the other man to understand the general principles of design that form a common meeting-point for the discussion, and acknowledging that a satisfactory result cannot be obtained in either field without the recognition of these principles and a wholesome respect for the other man's point of view.

The position of a garden and the character of its surroundings are the great primary considerations in working out a problem in garden design.

If the garden is conceived as being a part of the house design, it may be of four kinds, patio, court, entrance, or terrace. The type which is of greatest usefulness will of course be selected for the problem in hand. In order that the garden may harmonize with the buildings, the way in which the idea is carried out must agree with the style of architecture which in turn dominates the garden scheme, and it is this consideration alone that determines the manner in which the scheme is to be executed. Before discussing these four types in detail, the three purposes for which a garden may be designed must be recalled, namely, utilitarian, museum, and pleasure purposes.

Utilitarian gardens are those in which display is considered as of entirely secondary interest.

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Photograph by Anderson

**FIGURE 54. ARCHITECTURAL PREDOMINANCE, VILLA D'ESTE, TIVOLI
ITALY**

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Under this head will fall the gardens that have been made to utilize space which has been left available for one reason or another, but which was not primarily intended to be used as a garden. Thence can be traced the development of the formal garden.

In the castles of feudal times considerable space was left between the building and the fortified walls, and in some cases a court was used to give light and air, and to accommodate the peasantry and their flocks and herds in times of siege. The space was left primarily for that purpose, but was later utilized for fruit or pleasure gardens, and was the beginning of the English pleasance. The esthetic aspect was of entirely secondary importance and was of later development, having been added merely to give interest to what might otherwise have been unsightly. Whenever vegetables were grown the space was doubly useful. As these gardens, then, were the forerunners of the English pleasance, or pleasure garden, the development has been away from the utilitarian and toward the esthetic. Inclosed gardens are known as the "court" type, and are now found in our modern apartment houses and hotels.

Entrance courts are primarily utilitarian, and,

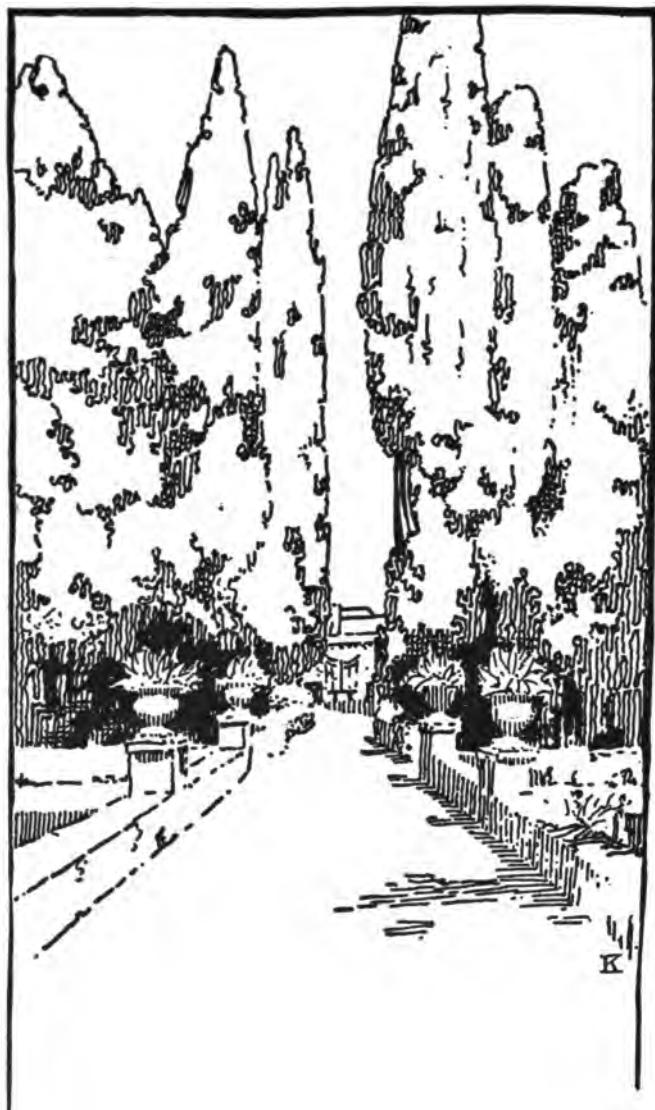


FIGURE 55. COMBINATION OF ARCHITECTURAL AND HORTICULTURAL ACCENT MATERIAL TO EMPHASIZE A VISTA, VILLA D'ESTE

different from the court garden, were primarily for convenience rather than for necessity. They present an excellent chance for combining utility and beauty, inasmuch as they offer a convenient approach and should likewise give a favorable first impression.

The terrace garden is not particularly utilitarian unless the house be set on sloping ground and requires a level space about it. In such a case the terrace garden is the most useful and beautiful solution of the requirement. The illustration (Fig. 56) shows a terrace used as a gradual transition from the formal design immediately surrounding the house to the more naturalistic planting at a greater distance.

The patio is a similar esthetic utilization of space left for utilitarian purposes. It is found in buildings of the Spanish type, and was closely related to the English "fore court" although this last may be termed an entrance garden. Many of these courts were designed as part of the scheme of circulation. These may be seen in the early English manor-houses as well as in the Italian Renaissance palaces, such as the Strozzi and Riccardi or the Palazzo del Te.

Horticultural gardens are the most important

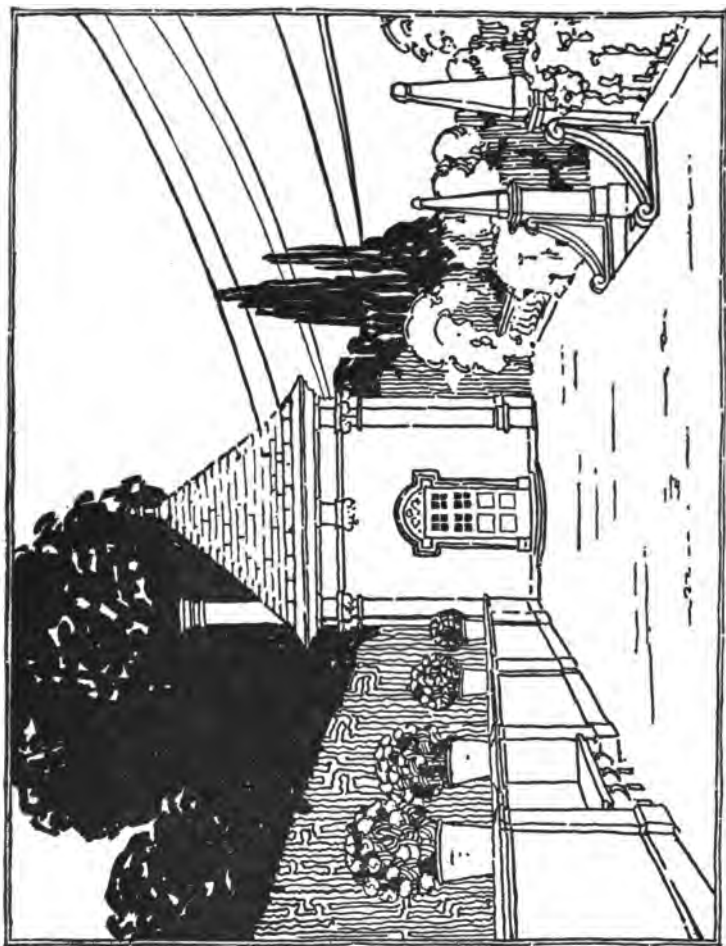


FIGURE 56. TERRACE GARDEN

division of the utilitarian garden. They are used for three purposes, food-stuffs, medicinal plants, and cut flowers. Under the food heading will be included orchards, shrubs, small fruits, and vegetables.

The kitchen garden is a good type of utilitarian garden which is often attractive in appearance, for in it vegetables and flowers for cutting are often grown together to advantage, thus producing almost the effect of a pleasure garden. Indeed, for a small suburban residence this is perhaps the most generally successful type. Where medicinal herbs and cut flowers are grown exclusively it is merely a question of getting the greatest value out of the soil, though nowadays medicinal gardens are virtually obsolete.

The museum garden is divisible by use into two branches, the educational and the botanic. Of these the first has far greater esthetic possibilities, as the plants may be displayed with greater freedom in regard to appearances where their position is not necessarily determined by their botanical classes.

In a botanical garden, where it is desired to display all possible varieties of a species, many examples are often present which are difficult to

harmonize with their surroundings, and the result is more or less a "filing system" of living botanical specimens, often incongruous in appearance.

The Arnold Arboretum in Boston is an excellent example of a well-planned botanical garden. Much attention has been paid to appearances, and the display elements have been judiciously featured. The large conifers grow under natural conditions on a rocky hill, about the outskirts of which the rhododendrons and mountain laurel cluster, while the gentler and more fertile slopes show plants of the plain-loving varieties. The natural topography varies from fairly level meadows to a rugged hill with a tumbling brook, and advantage has been taken of all the natural features suitable for the display of plants in conditions which as nearly as possible duplicate their native surroundings. The grades have been changed only where the building of drives demanded it. This is one of the most successful solutions of a botanical garden under ideal conditions, but it would seldom be possible to reproduce these conditions. Of course the amount of exotic material employed is rigorously prescribed by the climate, as it is entirely an out-of-door garden.

In public gardens in large cities the purpose is

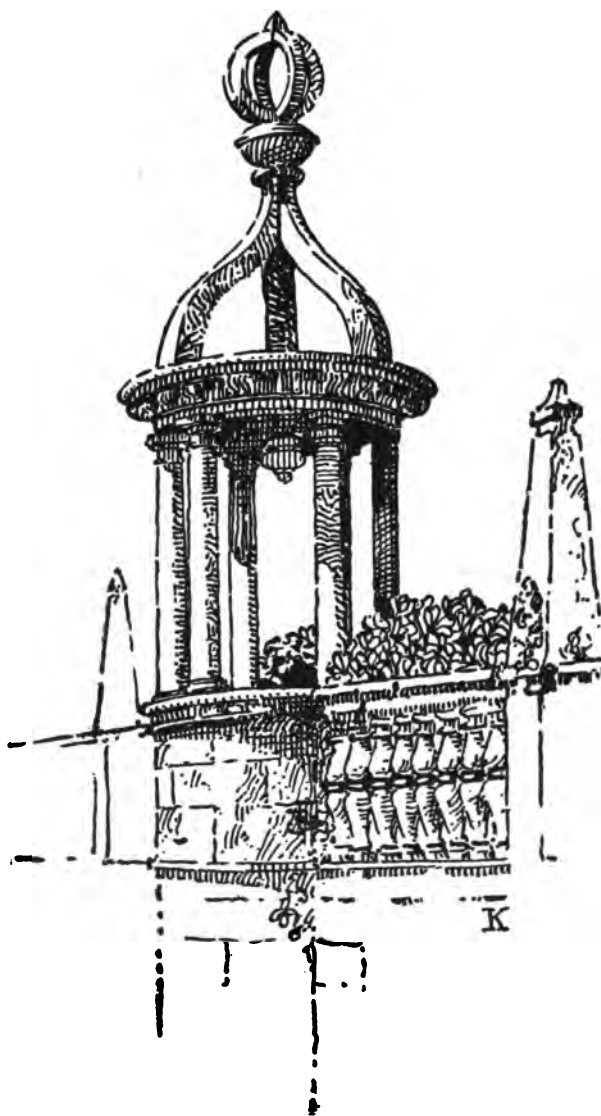


FIGURE 57. GARDEN TEMPLE AT MONTACUTE HOUSE,
ENGLAND

somewhat educational, and in a display of this sort plants are grouped not according to their botanical characteristics, but rather on account of their soil requirements, time of bloom, and hardiness. The first of these requirements will group plants of different appearances in the same location. The exposure of the position will likewise determine the hardiness of the plants to be employed. The time of bloom is more of an esthetic question, as are the color values of the leaf, flowers, fruit, and twig. The habit of growth will determine largely the position of the plant. Then, too, in a garden scheme of this kind special features are often introduced, such as a flower display or the exhibition of exotic plants. Specimens are frequently grown in more favored localities, and transplanted into the garden for a short time only for display purposes. There is no attempt made to group plants of the same habitat together, but the planting material is used solely on account of its shape, color, and quality, and upon the satisfactory combination of these depends the success of the result obtained.

Pleasure gardens are divided into two classes according to whether their emphasis is architectural or horticultural. In the architectural class



FIGURE 58. TOPIARY WORK

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the individual interest of the plant material which is used to achieve the design is of secondary importance. The plants are arranged and selected solely with regard to their size, form, color, and scale. This allows a vast latitude, for shapes desired in the design may be represented by any one of half a dozen quite different species. In fact, plants are here used rather as architectural members than as anything else. The architecture of the buildings and other accessories should predominate, but the architectural appearance must extend to the planting also if the garden scheme is to be successful. Therefore the planting must have somewhat the same stiffness and rigidity as is inherent in stone, brick, or wood in so far as the material employed permits.

An architectural garden should possess the same characteristics as a more extended architectural planting, but may be more fancifully treated and more highly specialized. A very interesting example of the use of architectural features in a decorative fashion is seen in the little "temples" which occur at the middle of the side retaining-walls of the formal entrance court at Montacute House (Fig. 57). The piers of the balustrade are crowned by stone pyramids, and in order to pro-

vide some contrast of elaboration with simplicity, and of curved with straight lines, these little circular buildings were introduced to emphasize the ends of a secondary axis.* The designer of a scheme of this sort may say to a horticulturist, "At this position I wish a tree or shrub of such a height, form, color, and texture," and he can safely leave it to the horticulturist to determine the species, knowing that the result will be successful so long as the specifications are followed. In such gardens plants are used to furnish backgrounds, to form part of an architectural mass, or, as in French and Japanese examples, they may even be clipped to carry out the details and forms of a style. Topiary work is not essential to the formal garden, but is often found in connection with it, and, indeed, would be out of place in any other kind of garden, unless only a single specimen were used. Topiary (Fig. 58) is not of sufficient importance in general landscape work to permit of discussion here.

In the horticultural pleasure garden the interest of the owner centers upon the plant itself, and the entire arrangement of the garden has as its one object the tasteful and advantageous display

* See pages 80-82.

of the plants composing it. The masses of planting are arranged either as individual plants or as plant masses setting off the forms of the plants which compose them rather than designed to harmonize with any extraneous features. If there are any architectural elements, they should appear incidental. The season at which the garden is to appear at its best is a potent factor, and the harmony of leaf and flower, as well as the sizes of the plants, must be carefully considered.

Since the question of garden design is as important to the landscape-gardener as to the architect, some mention of the subject from the point of view of each should be given here. It is of course impossible in a limited space to deal in an exhaustive way with a subject as large as garden design.

Design and the relation of each particular type of design to special problems will form the briefs of this discussion. The particular plants to be used and the matter of architectural details and construction, not being essential design requirements, need not be considered at the outset.

After the preliminary scheme of a garden design has been determined upon, the architect can design special architectural features, and the landscape-gardener should work out the problem of

plant materials. The question of architectural or horticultural emphasis must be decided by the conditions of the problem and its needs, without discussion as to whether the garden should be in the formal or informal style. The style must conform to the problem; the problem should not be arbitrarily squeezed into a style.

It has long been known that the old gardens of Europe were executed with certain broad principles in view, and that they were not laid out by men on the grounds without plans, but were carefully designed, with elaborate drawings, and then built at an enormous cost. A typical example of such a garden is the Villa d'Este (Fig. 59).

In the early Roman gardens plant material, on account of the climatic conditions, was a secondary consideration, but the plant material in a modern garden of the English type should be of primary importance for the same reason. On account of the general moisture and even temperature, it is possible to grow a great variety of plants in England, while the excessive dryness and heat of Italy prevent the use of any but the most hardy specimens. In these examples the style was primarily dictated by the climate. Almost any sort of climate may be found in America, and consequently

the limitations and restrictions imposed by locality, being rigorous, must receive careful attention.

A comparison of New England, New Orleans, and Southern Californian conditions will illustrate climatic differences. New England winters are long and cold, with a late spring and an early autumn. Therefore only plants which are hardy enough to live through severe weather and require

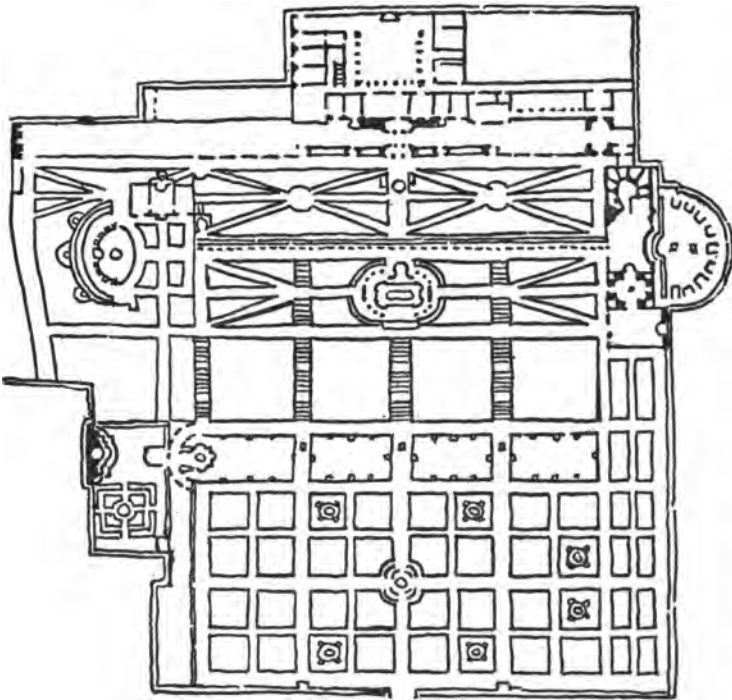


FIGURE 59. A TYPICAL ITALIAN GARDEN PLAN, VILLA D'ESTE

only a short time for flowering and fruition are suitable for use.

New Orleans is warm the year around, with plenty of rain and moisture, giving a large range of plant material, and even permitting the use of some vegetation of a tropical character.

In Southern California the winter is mild, but there is a dry season extending from July to December; consequently the planting material must be such as will survive long periods of drought and require little water. If a plant is well suited for one of these three sets of conditions, it will often be impossible to employ it to advantage in either of the others.

In an analysis of garden design, every problem must be considered from two points of view: first, that of use; second, that of its esthetic value. The use is of primary importance, but a garden is generally designed for pleasure purposes, and so the appearance can hardly be termed secondary; a garden should give pleasure as well as comfort to the beholder.

The importance of the topographical features of the landscape as affecting garden design may again be noted in a comparison of the French and Italian gardens. The magnificent conceptions of

Lenôtre could never have been executed elsewhere than on a broad plain, nor can one conceive of such designs as those of the Villa d'Este and the Villa Lante as existing anywhere but on their own rocky hillsides. In fact, in each of these cases the garden owes its peculiar charm to an insistence upon the topographical surroundings and contours, and these, instead of being considered as limitations, have been of great assistance in determining the garden scheme.

Japanese gardens are often built upon uneven ground, because they generally represent the whole countryside, with hills and plains upon a very small scale. Informal gardens generally look better upon uneven ground, for it is difficult to make level ground appear naturally informal.

If the gardens are designed at some distance from the house, the character of the architecture will have nothing to do with the garden design, and the garden may be considered as an entirely separate feature. Gardens in connection with the house and treated as out-door rooms (Fig. 52) should be of the formal type, because their lines must harmonize with the architecture, and carry the idea of the building beyond the limits of brick and plaster. These may be called architectural

gardens. It must be remembered that a formal garden does not necessarily mean clipped hedges; there is as wide a range of formal style as of informal.

The style may often become gradually more informal as the garden recedes from the house, and in this way may give a gradual transition from natural to artificial features.

In the horticultural gardens, where the main interest is in the plant material, the gardens may be either formal or informal; but the main determining factors are the kind of soil at hand and the species of plants which it is desirable to use. Of course the garden should be so designed as to display these to their best advantage. Topography likewise enters here in determining the amount of grading which will be necessitated by the type of garden required, and conversely in the adaptation of the garden style to the contour of the existing landscape.

The informal type of garden is not necessarily more nor less admirable than the formal type; it is, indeed, more often unintelligently used than the formal garden, and consequently is receiving a larger amount of meaningless praise. In fact, the sort of adulation that is often heaped upon the



FIGURE 60. A GARDEN AT MILTON, MASS., ILLUSTRATING A GOOD USE OF BEDDING PLANTS

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informal garden has done a great deal to injure it in the minds of those who believe that design has some value. It is unfortunate that it should have suffered in this way, for at its best it is altogether a desirable type of planting.

In characterizing the architectural garden one might say that the planting materials are used merely for form and color, but principally for form, and that they may be considered almost as architectural members. Wherever flowers appear in a formal garden it is not on account of the individual beauty of the flower itself, but because a color note is needed to relieve an otherwise somber color scheme. In Figure 60 red geraniums are used for that purpose. The vases on the balustrade at the Villa Lante are an ingenious means of introducing plant form and color into very strictly architectural surroundings (Fig. 61).

The accent in the formal garden is generally a piece of sculpture or an architectural feature, such as a well-curb (Fig. 62), a fountainhead (Fig. 63), a gate, stairs (Fig. 64), a bridge, a sundial, or a retaining-wall (Fig. 65).

Where accents occur in informal planting they are as a rule horticultural, and rely upon some difference in the accent plants from their surround-



FIGURE 61. ARCHITECTURAL VASES USED TO INTRO-
DUCE PLANT COLOR, VILLA LANTE,
BAGNAIA, ITALY

ings. The difference may be in form, color, quality, or size.

As has been said, the horticultural garden is divided into three classes, according to its practical uses: the cut-flower, the vegetable, and the fruit garden. It is not necessary, of course, that

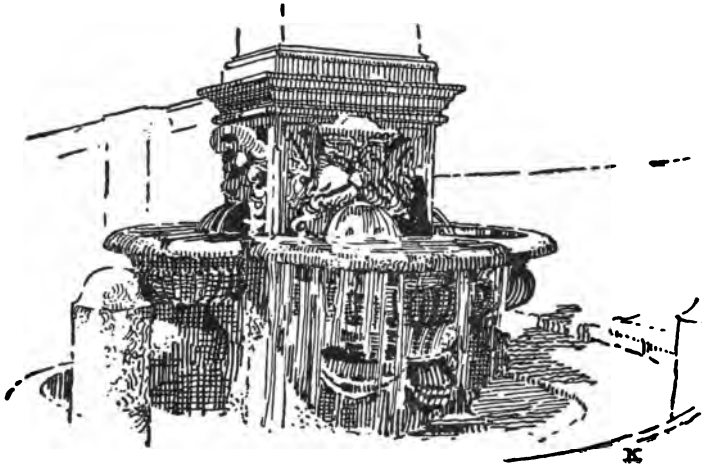


FIGURE 62. FOUNTAIN AT VILLA BORGHESE, ROME

these be ugly, but because designed entirely for economic purposes the gardens will necessarily appear much simpler and more monotonous than if they had been laid out with some emphasis upon their esthetic side.

Within the major limitations of formal and informal, architectural and horticultural emphasis,



FIGURE 63. POMPEIAN FOUNTAIN HEAD

position and topography, there is considerable scope for the exercise of imagination by the garden-designer, although, where the gardens are designed for esthetic purposes, the taste of the client is a rather powerful determining factor. He may wish to make his garden naturalistic; that is, of a



Photograph by Anderson

FIGURE 64. STAIRWAY AT THE VILLA DESTÉ

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sort that he would find in a ramble about that locality, growing in natural conditions. He may wish to make it picturesque by emphasizing unusual features and combinations, or he may, from his interest in other countries, desire a large display of exotic plants. These questions deal not only with the plant material, but more or less with the arrangement. One cannot use the irregular plant material in formal planting schemes any more than one can produce an appearance of informality by the use of stiff, precise plants and clipped hedges.

The villa type of garden is one which must be considered most frequently in America, and is the type employed to best advantage in the suburbs of large cities, and in the residential portions of small cities. The garden planting in this case is considered as a setting for the house, and therefore spreads itself about more than if it were restricted to a definite area, as in the case of the out-door-room type of architectural garden. Neighborhood planting would come under this head. The out-door room idea may exist, indeed, as a part of the scheme of villa planting, yet the restriction of all plants to such a purpose would lay major emphasis on a strictly formal treatment, and would

not help to tie the dwellings in with the more or less irregular surroundings of American suburbs.

Where views can be seen from the house, the planting of the villa garden should be such as to emphasize the prospect, and wherever any objectionable views occur they should be screened by a judicious use of shrubs. Where the grounds are of sufficient extent, games and recreations enter into the problem. The laying out of tennis-courts, bowling-greens, swimming-pools, and even tracks and base-ball diamonds must often be taken into consideration in connection with villa gardens. The landscaping of a villa is influenced largely by its scale, but it occurs as a sort of middle ground between the formal and the informal types, using sometimes the freedom of the one, and sometimes the restraint of the other.

Topiary work has long been associated with formal gardening, and would appear to be at variance with many types of planting, and altogether individualistic (see Fig. 58). Upon close study, one finds that, instead of being sharply differentiated, this type of planting is really a form of the gardenesque. Topiary was introduced into England by William of Orange and Queen Mary in the sixteenth century. It became a fashion among the



FIGURE 65. RETAINING WALL AT VILLA FALCONIERI,
FRASCATI, ITALY

wealthy class in England, and gradually spread, so that even at the present time it is common to see trees clipped in various forms in the gardens of the smaller homes.

Topiary work may be divided into three types of planting: the parterre type, in which the planting is to be seen from one point; the formal type of planting, in which, though the plants are seen in elevation, they are used to bring out some particular feature in the design; and finally the type in which trees of different shapes and sizes are employed much the same as in gardenesque planting, where plant material is grouped and dotted about without regard to its composition in mass. The plants used for this work are those which are naturally formal or peculiar in shape; those which are restrained by clipping; and plants which have been made to grow dwarfed by clipping, budding, or by binding the roots.

Almost all garden design, then, can be analyzed as falling more or less under one of the two great divisions, the formal and the informal. The garden is a personal sort of thing, really the most intimate part of any landscape scheme, and if it does not reflect something of its owner, it falls short of its possibilities. It may be as small as one of the

tiny cottage gardens of England or as large as the gardens at Versailles, but it is sure to conform to certain general *principles*, not *rules*. Stated simply, it may be said that every part of a garden must contribute toward the beauty of the general scheme, and that it will not do this if it seems to be present without a purpose. Every part of a garden should be esthetically utilitarian.

THE END

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